



Published on the 1st of each Month by

THE INDIA RUBBER PUBLISHING CO.

120-122 LIBERTY ST. NEW YORK, U. S. A.

LONDON OFFICE, 225 STRAND, W. C.

JNO. R. DUNLAP.

H. C. PEARSON.

Vol. 19.

DECEMBER 1, 1898.

No. 3.

SUBSCRIPTIONS: \$3.00 per year, \$1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.

ADVERTISING: Rates will be made known on application.

REMITTANCES: Should always be made by bank draft, Post Office Orders or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.

DISCONTINUANCES.—Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Entered at New York Post Office as mail matter of the second-class.

TABLE OF CONTENTS

Editorial:	PAGE
The World's Trade for Americans	55
A School for Rubber Workers	56
Americans Losing Ground in Rubber Footwear	57
[A Field for the Development of an Export Trade.]	
Decline of the Rubber Yield of Burma	59
Brief Abstracts of Recent Rubber Patents	61
Single Tube Tires Winning Favor in France	63
New Goods and Specialties (Illustrated):	
Mallin's Metallic Belt Lacing	71
The "Acme" Storm Front	71
Green's Emergency Fastener Clamp	71
A New "Alpha" Syringe	71
"Buckeye" Double Tube Tire	71
A Handsome Toilet Case	72
The "Neakid" Rubber Glove	72
Combination Sporting Shoes	72
Self-Adjusting Carriage Tires	72
Practical Hints from a Tire-Repair Shop (Illustrated)	67
Enlarged Factory of the Joseph Stokes Rubber Co. (Illustrated)	73
Miscellaneous:	
Our Rubber Imports Analyzed	58
New Crude Rubber Companies	60
Rubber Planting in Costa Rica	60
Returns from "Castilloa Elastica"	60
Information About Bolivia	60
What Caused the Leaks?	63
What Boston Rubber Cost	64
Recent Trade Publications	64
Farmers' Sons as Rubber Workers	65
Record of Business Troubles	65
A Tire for the German Army	66
The Editor's Book-Table	66
History of One Rubber Invention	66
Novelty in Spreading Machinery	68
A Change in Firm Style	68
Eggers & Carlsen Sell Out	68
No Fakes Out the "Tushlar"	68
Random Notes from Pará	69
The Gutta-Percha in a New Cable	69
Good Rubber Pump Valves	70
American Dress Shields Abroad	70
Uses of Rubber Tree Seeds	70
Four Tires Exported	70
Rubber Band a Remedy for Headache	70
Perchoid in India	73
Canada Takes More Rubber	74
The Rubber Interest of Africa	74
The Woonsocket Body Boots	74
The M'Callum Substitute for Rubber	74
A Few Notes from England	75
He Should See American Rubber Belting	75
Patriotism and Golf	75
Our Druggists' Sundries in Africa	75
Heard and Seen in the Trade	76
Trade and Personal Notes	77
Review of the India-Rubber Market	79

THE WORLD'S TRADE FOR AMERICANS.

THERE is a two-fold reason for an increased interest in export trade in the United States just now, as we face what may prove the one great opportunity in our history as a nation to take a leading position in international commerce. In the first place, the time is ripe for our participation in new interests, the development of our home trade in so many lines having reached practically its fullest measure, making wider fields essential to our further industrial growth. The time is ripe for the additional reason that non-manufacturing countries are beginning to increase largely their consumption of many commodities which we are prepared to furnish; for instance, steel rails for new railways in India, China, and Africa. Nor need we, in the search for wider markets, be content with new ones; many products of American industry are being sold in Europe in competition with producers there whose supremacy in the same lines was regarded once as complete. And this is notably true of rubber manufactures.

A second consideration is based upon the new opportunities which have resulted so unexpectedly from our war with Spain. Not that the trade already existing with our new possessions is so important; that is not the question. The trade of Australia, now so extensive, was nil before the English acquired control there; seventy-five years ago there was no trading at Singapore, now one of the great commercial centers of the world; and the list might be extended indefinitely. The possibilities which exist with regard to these new possessions are due to the facts that (1) without exception, they are fitted superlatively for producing commodities which are and must remain in great demand; (2) that under intelligent and honest government such production should become greatly fostered; and (3) that countries which are large exporters of valuable native products are a good field for the sale of manufactured goods. But even this does not exhaust the list of possibilities in the way of extending our trade.

While we were not even dreaming of territorial conquests from Spain, there fell into our hands, almost without effort on our part, a foothold in the far east for which most of the European powers would not have hesitated to pay dearly, in blood or treasure. This point of legal possession is a first essential in that commercial expansion which is our legitimate ambition. So long as we Americans were content to sit still and sell our cotton and wheat and provisions to foreigners who crossed the seas for whatever they could not produce at home, we may have been large exporters, but not a power in the world of commerce. Had England been able to grow cotton in India, or Russia to supply the world's demand for wheat and kerosene, large slices of our foreign trade would have melted away. That this has not happened has been merely our good luck.

But if we would make an aggressive effort to sell our iron, our machinery, our textiles, our rubber goods, in foreign markets, to such an extent as to give us supremacy in important lines, we must hold territorial bases of action in the regions important to our commerce. There must be

coaling stations for the convenience of our ships in time of universal peace, and as a necessity when war arises with the possibility ever present of the closing to us of foreign bases of supplies. There must be harbors and docks for the accommodation of our shipping at points away from home, and for the increased naval force essential for the protection of a growing commerce. And there must be solid ground where, under the stars and stripes, under our own just laws, under our safe financial regulations, Americans can live and carry on business far from these States, if need be, and contiguous to those countries beyond the Pacific which are yet to develop a commerce which will cause that ocean to rank in importance with the Atlantic. Indeed the possibilities of commerce with the Chinese alone—four hundred millions of industrious, frugal, and peace-loving people—are beyond computation.

"Ideas underlie action," writes Captain Alfred T. Mahan, of the United States navy, in an able article in *The Engineering Magazine* (New York), on "The United States' Relations to the Industrial Development of Their New Dependencies." It may be added that no other man living has contributed to the working out of our new problem of national expansion, a more valuable idea than this gentleman has formulated on the bearing of sea power upon the security and the progress of nations. We may confine our export trade to cotton and foodstuffs, leaving to others the supplying of the world's growing wants in manufactured goods, and sea power need concern us no more than it does China, which does the same kind of export trade in the tea which foreigners go to her to buy. But if we are going to compete with the world in manufacturing, we must take the aggressive, and when we do this our success will be as certain as was that of the American over the Spanish fleets last summer. Commercial contests, like naval combats, are conducted on the seas, and to win in one no less than in the other, one must be equipped. Good equipment for commerce involves the possession of such stations abroad as we have just gained, and which ought to become the basis for a new era in our greatness as a nation.

These new opportunities impose upon Americans new responsibilities, a failure to meet which would be incompatible with our reputation for independence and progressiveness. While the rubber industry is not so large as some others, and while the new situation may seem to appeal to it in less degree than to some other interests, we want to declare *THE INDIA RUBBER WORLD* to be second to no other organ of commercial progress in the earnestness with which it will labor for the development of the new era, confident that in the end Americans will be competent to control—and that they will control—the great industries of the world, not excepting the rubber manufacture.

A SCHOOL FOR RUBBER WORKERS.

IT is suggested by a writer in the *Gummi-Zeitung* that the rubber industry in Germany might be benefited by the establishment, for the training of rubber workers, of a

technical school, such as those which already exist for the textile and some other branches of manufacture. If his views are well founded, no reason appears why the same benefits should not follow the establishment of similar schools in other countries, including the United States. No doubt great benefits have resulted from the trade schools of Europe, which have come to be regarded by many manufacturers as a valuable adjunct, if not a supreme necessity, to their business. The recent gains in German exports are considered by many observers as a result in part of the high grade to which technical schools have been developed, particularly in Prussia, and, as a precaution against danger from continental competition, the English have been actively establishing textile schools.

The movement has reached America, a textile school having been organized at Lowell, Mass. This school offers instruction for persons taking a regular course, in lieu of employment in a mill, and for mill employes wishing to improve themselves in certain branches of work, besides which popular lectures are delivered. According to the projectors of this school, the mill itself is an establishment for making cloth, and not primarily for the education of would-be overseers and superintendents; in fact, a young man often finds it difficult to obtain all the information that he desires in a mill. The opposite is the case in a school, where the primary object is to instill all the information possible. It is claimed, indeed, that three years judiciously spent in a textile school are equal to twice that time in a mill.

No doubt the principles of chemistry and dyeing, and the rudiments of designing, and the operation of machinery may be learned under the roof of a textile school as well as under that of a mill, and the same may be true of details in the rubber industry. But there is a certain difference in conditions due to the very fact mentioned above—that a mill is an establishment for making cloth (or rubber goods, for instance), while a school is not—that must always lead to a difference in results from mill training in contrast with school training, in a very important particular. By the way, the first object of the mill is something more than to merely make goods; it must make them at a cost which will enable them to be sold at a profit. It is here that the rubber factory operative, provided he keeps his eyes open, ought to have an advantage over the school man; the one place giving him an insight only into the chemical or mechanical details of the business, while the other opens the way directly to a study also of the commercial aspect, besides educating him in those lessons of discipline of self and others without which success is not to be attained in the position of superintendent.

The wonder of the industrial world of late is the prominent rank which the United States have taken as an exporting nation—underselling all competitors while paying the highest wages. The customary explanation is that the productive power of the American workingman is higher than elsewhere, which is true; or that a more effective use is made of machinery here than abroad, which is also true; but the fundamental reason is that the American is more inventive, more resourceful, more adaptable than the com-

peting workers of any other land. Set to work without machinery, he would invent it; started in life with a course of school training, he would disregard it as soon as he was confronted by problems to which it was not adapted. It remains to be seen whether workers of this type are more apt to be developed from instruction in schools, where no responsibility exists other than that of learning set lessons, or from work in a mill where every man is a factor in producing so many goods within a given time, which shall both reach a required grade and not cost beyond a given figure.

Of course, the more intelligent a man is, and the more information he may have of a practical kind, the better rubber worker he ought to become. But it remains to be shown that more can be learned in a technical school, or even as much, in a given time, as in a well managed rubber factory. Such a man as the late Mr. Banigan, for instance, needed no elaborately equipped technical school to make him a successful rubber man, nor would a dozen such schools have made him one had he lacked the qualities which win success.

Whatever may be the final decision with regard to trade schools, it can be asserted that, in attempting to keep their

processes secret, rubber manufacturers hinder the fullest development of their industry. No great industry has ever shown more rapid progress than steel making in recent years, and every step in this development has been open to the world. The result is that every intelligent mind with a bent in that direction has been encouraged to work in the hope of making improvements. It has been found that the greater the number of people familiar with the processes, the greater was the progress made, while every steel producer had a chance to profit from every discovery in the art, the world over. The technical school from which factory secrets are excluded would not be worth keeping up. Such schools are maintained practically by manufacturers, and if they could afford to have all the details of the industry taught to classes of students, there would no longer be any reason for keeping them secret in their own factories. If, therefore, the establishment of a school for rubber workers should result in making all the processes of the various manufacturers common property, the industry as a whole would be benefited. But the same result has been reached in the steel industry without the agency of special schools, and might just as well be in the rubber industry.

AMERICANS LOSING GROUND IN RUBBER FOOTWEAR.

A Field for the Development of an Export Trade.

OVER 1,000,000 pairs of rubber boots and shoes were exported from the United States in the fiscal year 1854-55, of the declared value of \$686,769. Forty years later the exports for a single year (1894-95) amounted to only 383,793 pairs, worth \$225,986, while in two of the three years which have elapsed since the figures have been even smaller. Yet the use of rubber footwear has not declined abroad. On the contrary, never before were so many rubber shoes worn in the world as now, but the United States have relatively become less important producers of goods of this class. Beginning years after the rubber shoe industry in America had reached important proportions—indeed, after our exports to Europe had gone above the million mark—factories were established abroad to duplicate our processes and our products, with such success that our own concerns were left with only their home trade to supply. This has been and is a large trade, and right well has it been covered, but after the wants of our own 75,000,000 people have been supplied, there remain about twenty times as many more people in the world, many of whom ought to wear rubbers, and some of whom do.

While no exact figures are available, the estimated production of rubber shoes in Europe is over 100,000 pairs daily,* which indicates a much more rapid increase of growth in the industry abroad than here. At least there is indirect evidence of a very large use of such goods—as the export from Russia of 3,000,000 pairs of "galoshes" in a year, and the importation into the United States last year of 3500 tons of foreign made rubbers in the shape of scrap. Europe alone ought to afford a much larger demand for rubbers than the United States, even if such a demand has not existed up to date, besides which there is already a sale for such goods in Asia and Africa—in countries which are no longer so inaccessible as when the

average business man of to-day studied, and left behind, his geography. With this rate of growth in the European industry, if the rubber manufacturers of the United States remain content to confine their trade at home, it would not be surprising were the rubber shoe business abroad yet to largely exceed its limits in America. Perhaps we shall not see foreign rubbers offered for sale here, though the possibility of such a thing has been discussed seriously on the other side.

Now, if there is any industry on earth in which Americans ought to take the lead, it is making rubber footwear. This was the first branch of the rubber manufacture to be developed to an important extent. It was, indeed, in the attempt to produce serviceable rubber footwear that Charles Goodyear made the discovery which gave to the world the process of rubber vulcanization. It was from among the concerns licensed by Goodyear to apply his patent in the manufacture of shoes that sprang most of the great companies who became wealthy and famous in this country, long antedating in point of success the leaders in most other branches of rubber. It was likewise Goodyear's Shoe Associates that furnished the capital and the enterprise upon which was founded the rubber shoe industry in Europe. Already the wearing of these articles had become general enough abroad to afford at once a demand sufficient to support the new factories, while from the first day until now the demand has increased. Meanwhile the business has increased likewise in America, until a point has been reached where further development is hardly possible, except in the direction of opening new markets.

The high degree of development reached in the home trade has been due to an apparent determination that no demand could be expressed for an article of rubber footwear without an effort being made to meet it. No matter how light, how heavy, how coarse or how fine, how high or how low in cut, a man or a woman might want rubbers, they have been available.

*An article in THE INDIA RUBBER WORLD, September 1, 1898, gives details which aggregate 33,500,000 pairs as the annual outturn of rubber shoes in Europe.

Whether for wearing over patent leathers, by one going in a carriage to a ball, or by an oyster fisher spending all day in the water, suitable rubber "boots" were accessible for whoever "had the price." In consequence of the policy so long pursued of suiting every taste, there are rubber stores that can show to-day footwear in 6000 or more different sizes and styles, with a considerable range in prices. Not only have the manufacturers been on the alert to respond to every call made upon them, but the most competent salesmen available have employed, with a view to disposing of as many goods as possible, by making to the interest of every dealer in the country who seemed properly situated for handling rubbers to keep them in stock. Can there be any doubt that the application of similar methods in the pursuit of orders from the foreign trade would have yielded profitable returns?

A gentleman formerly but not now interested in the rubber shoe trade narrated to the writer his experience in building up a trade in rubber boots in Cuba, without a great deal of trouble, but he was obliged to turn his attention to other matters, and the export trade suffered neglect and soon died. On referring to the government export returns, it was found that the number of rubber boots and shoes shipped to Cuba during the period in question was greater than in any corresponding period, before or after. It might be supposed that in a country where snow is unknown, and where it is "cold" when the thermometer falls to 70°, there would be little use for rubber boots. On this point, a United States consul who was stationed for some years at Santiago de Cuba says that a considerable number of rubber boots are worn by plantation laborers during the rainy season, and that more ought to be worn, considering how much afraid every one in Cuba is of getting wet, and especially foreigners. No doubt similar conditions exist wherever sugar cane is cultivated, as they probably do also in rice growing countries. The gentleman quoted above also succeeded in building up a trade in rubbers in Japan, which also died from neglect. It was his understanding that the rubber "bootees" which he introduced successfully were worn by the rice planters, who have to stand in water a great deal, often with bad results to health. These points are mentioned only to indicate that special conditions exist in different parts of the world, advantage of which might be taken to introduce rubbers on a scale large enough to be worth while. In connection with what is said above regarding Cuba, it may be said that not even the United States Rubber Co. have given any attention to a possible market there. What effort may be in progress to introduce European rubbers into China is not known here, but at least none is making to sell American goods. That some rubbers do find their way into China, however, and in increasing numbers, is shown by the following comparison of the imports for two ports alone—"and there are others":

	Canton.	Kowloon.	Total.
In 1887, pairs.....	8,620	3,491	12,111
In 1897, pairs.....	73,746	56,751	130,497

When it is considered how vast is the population of China, and how great a number of the Chinese must be ignorant yet of the existence of such a thing as rubber footwear, it may be possible to build up a very large trade in such goods. Until recently knit socks were unknown in China, but as fast as the people become acquainted with these articles, they buy them readily, so that to-day some large factories in England are running full on socks for the Chinese trade, as the result of certain efforts made to introduce these goods. Their example is worth the attention of the rubber shoe trade, which ought not to find it more difficult to produce a shoe adapted to the Chi-

nese taste than a "combination" or lumberman's shoe, such as are sold in America.

But the effort to sell rubbers abroad need not be confined to countries where they are still little known. We make better rubbers by long odds than in the early days when we sold all the rubbers worn in Europe; we can make them more economically than ever before, and ship them more economically, and sell them at less expense, seeing that the work of educating the masses in regard to rubber footwear has already been done. Before much progress can be made, however, it will be necessary to take account of the difference in styles and shapes necessary, as well as possible differences in quality and finish, and even of different prices from those now prevailing here. But in any event it ought not to be harder to adapt the conditions of manufacture to different countries than to the wide range of demands at home.

OUR RUBBER IMPORTS ANALYZED.

THERE is some promise that in time it may be possible to determine the volume of the world's production of India-rubber from the import statistics of the various consuming countries, judging from the shape in which certain returns have been made up recently by the United States government. They are of interest particularly on account of showing, in more detail than hitherto, the classification of India-rubber and Gutta-percha imports. The figures below are taken from a table of "Imported merchandise entered for consumption in the United States, including entries for immediate consumption and withdrawals from warehouse for consumption, during the year ending June 30, 1898":

CLASSIFICATION.	Pounds.	Value.	Value per pound.
Balata.....	83,968	\$ 31,461 00	\$0.375
Gutta-percha.....	373,530	154,968 00	.415
Gutta-jelatong.....	2,222,955	45,091 00	.020
India-rubber.....	46,328,868	25,396,590 00	.548
India-rubber scrap.....	7,190,089	256,387 85	.036
Total.....	56,199,410	\$25,884,497 85	\$0.461

These figures differ slightly from the returns of total imports during the same period, since they do not refer to the identical commodities. That is, the withdrawals for consumption probably included rubber imported during the preceding fiscal year, while some of the imports for 1897-98 remained in storage at the end of that period.

The appearance of the item of India-rubber scrap in the list suggests that the same class of material may be included in the rubber imports of some other countries, thereby complicating any attempt to estimate the actual quantity of rubber involved. The amount of rubber scrap named is nearly double the highest volume of imports of this material hitherto. The imports have been, by fiscal years, in pounds:

1893-94.	1894-95.	1895-96.	1896-97.
1,774,008	2,032,563	3,874,677	3,653,945

The average value of India-rubber scrap entered for consumption during the past year was a trifle lower than in any of the preceding years named.

THE AMAZON CABLE.—On September 28 a cable steamer left London with 100 miles of submarine cable for the Amazon Telegraph Co., Limited, to be laid in the Amazon, indicating that further repairs are needed in the ill-fated cable in that river. The core consists of 7-strand copper conductor, weighing 130 pounds per mile, insulated with an equal weight of Hooper's patent India-rubber.

DECLINE IN THE RUBBER YIELD OF BURMA.

THE most recent information regarding the rubber resources of Burma is less encouraging than reports which were current a few years ago.* From about 1870, when the first exports of rubber were made through Rangoon, the volume of such exports increased steadily, and it was but natural, in the absence of accurate knowledge of the interior of Burma, that the hope should be entertained of finding an abundance of *Ficus elastica* there. It now appears probable, however, that the highest limit of production has been reached in Burma, as was the case in Assam a quarter of a century ago. But Assam continues to export a certain amount of rubber year after year, in spite of the recklessness with which the trees have been bled, and the same conditions may prevail in the newer rubber districts over the border in Burma. As a matter of fact, the present outturn of Assam rubber is not all produced in that province, but is "imported" largely from the foothills of the Himalayas. So in Burma the traders press farther inland every year, in search of new sources of rubber, to compensate for the trees destroyed in the regions formerly productive. It has become profitable to bring rubber from a greater distance since mule transportation has been employed instead of coolie porters, but even with this improvement there is a limit to the distance over which the rubber can be transported at a profit, since it is necessary to carry food for both man and beast, going and coming, the rubber country affording no provisions.

According to the latest "Progress Reports on Forest Administration in Burma," the quantity of rubber extracted for sale for several years past was as follows:

Forest Years.	Eastern Circle.	Western Circle.	Total (Pounds.)
In 1893-94.....	736,121	17,911	754,032
In 1894-95.....	625,420	14,370	639,790
In 1895-96.....	457,042	2,986	460,028
In 1896-97.....	385,462	1,358	386,820

The first of the years named saw the largest outturn of rubber in the history of Burma, and the steady decline since that time, following the steady rise that had continued for twenty years, has received close attention from the government. One inducement for this has been the decline in the revenues derived from rubber from 151,258 rupees in 1893-94 to 79,613 rupees in 1896-97. Throughout the Forest Administration reports the position is maintained that the natives, tempted by the improved prices paid for rubber, are exhausting the supply by overtapping the trees. Various measures have been suggested for the protection of the forests, but their remoteness from the centers of administrative activity renders the enforcement of laws against the natives practically impossible.

A fact of prime importance revealed by various official reports is the comparatively narrow limit of the rubber producing area in Burma. The greater part of the rubber exported comes from the Hukong valley, in the Bhamo district, and particularly along the upper part of the Chindwin river. This territory practically adjoins Assam, many of the characteristics of which province it possesses. In a "Report on India-Rubber Forest and Trade in the Bhamo District," E. A. O'Bryen, assistant conservator of forests in that division, stated that no-

where had he found the trees abundant. He estimated the average number at about 58 to the square mile. In a journey of twelve and a half miles in the chief rubber district he counted only 44 rubber trees, of which 3 were dead and 7 seedlings. Not only are the trees widely separated, but the natives are unable to resist the temptation to ruin them. Mr. O'Bryen wrote:

"A large tree [*Ficus elastica*] with three or four stems and a well developed crown will yield the first year it is tapped 210 to 245 pounds; if tapped again the next year—and the Kachins invariably tap a new tree three years successively—its yield will fall off to 140 pounds; and the third year not more than 52 to 70 pounds are obtainable; the fourth year it would yield nothing. If, after having been tapped for three years successively, it be allowed to rest for a couple of years, perhaps 90 pounds may be obtained; but by the three successive tapplings the vitality of the tree is permanently injured. . . . The wood of the *Ficus elastica* is white and extremely soft and liable to decomposition; consequently, if the wounds are not quickly covered over, rot sets in and progresses with astonishing rapidity up and down the stem, and in a very short time the tree is smashed off in a storm."

With the possibility of such a yield as above stated, it is not strange that the Kachins—the natives of the Hukong valley—should fail to spare the trees in tapping them, or that all the trees within ten days' journey of their villages should be reported exhausted. Another assistant conservator of forests, W. T. T. McHarg, reporting on rubber in the Minbu division, expresses a belief that the natives are beginning to realize the importance of better care of the trees, and it may be that this will prevent their extinction in Burma, but the great damage done already to the most desirable forests—desirable because most accessible—cannot be repaired in this generation. In his "Report on the Hukong Valley and Upper Namkong Basin," H. N. Thompson, one of the assistant conservators, wrote last year: "During the whole of my stay in the Namkong and Namsang forests, I do not think that I came across a single large tree of *Ficus elastica* that had not had its roots heavily tapped, while dead and dying trees were frequently seen. The forest rules seem to be a dead letter up here." It appears that an appreciable quantity of rubber can be obtained from underground roots not more than two inches in diameter, while trunks above ground cannot profitably be tapped under six inches.

According to Mr. O'Bryen, the transport of the cut rubber is the great obstacle to the further exploitation of the forests. The methods of work of some of the natives is described as follows: "When the rubber is rolled up into balls, they carry these down in bamboo baskets, 15 to 20 viss (1 viss=3.65 pounds) at a time, to a stream, when they can count on an average depth of about six inches of water. There they string the rubber balls together by canes passed through their centers, and thus form long lines of balls 15 to 20 feet in length. A number of these strings are then towed down stream by means of a chest band of woven cane. If the stream becomes too deep for them to tow the rubber with comfort, they make small bamboo rafts, place the rubber inside, cover it with a layer of bamboos, and pole it down to its destination."

The government in Burma has attempted to control the collection of rubber in certain districts by the sale of licenses

* Previous articles bearing on this subject and published in THE INDIA RUBBER WORLD, which may be read with interest now, are:

"The Rubber Product of British India," October 15, 1894—pp. 11, 12.

"The Rubber Situation in Assam and Burma," August 10, 1895—pp. 310, 311.

to the highest bidder, which carry with them a monopoly in rubber, while penalties are inflicted for cutting rubber without a license. By withholding a license for a year now and then, the trees are allowed to "rest." In the Mambu district, in the Eastern circle, two incidents have tended recently to discourage bidding for licenses. One licensee was robbed of a ton of rubber he had gathered, and as nothing was done to give him compensation or redress, he declined to take out a license the next year. In another case, a licensee bought rubber near the border which was claimed by the authorities in Manipur to have been gathered in that country, and a clash of authority led to the detention of the rubber for a year and the discouragement of the licensee.

SUMMARY.

The rubber districts of Burma are limited in extent and remote from the coast.

Where rubber trees do exist, they are as a rule widely scattered.

The rubber trees in the more accessible districts have been permanently injured by overtapping, and it will be years before a new growth can supply their places.

The authorities have been able to do little for the protection of the rubber trees.

Consequently, the collection of rubber has fallen off steadily for four years past.

It is known that absolutely no results of value have followed attempts at rubber cultivation in Burma.

The only conclusion is that other sources must be sought for any increase in the world's supply of rubber.

New York, November 22, 1898.

HAWTHORNE HILL.

NEW CRUDE RUBBER COMPANIES.

THERE has been registered in London, with a capital of £50,000, a company to be known as the Mahogany and Rubber Co., Limited, to acquire the Maria Enriquez estate, at Panama, from the Timber Exploration Co., Limited. The prospectus sets forth among the objects of the company the general development of the lands of which control has been acquired—involving such a variety of detail as to suggest that the word "Rubber" has been included in the name of the company only because it happens just now to be supposed to be attractive to investors.

Another English company registered lately is the East African India-Rubber Syndicate, Limited, with a capital of £25,250, "to acquire, own, and work plantations of India-rubber and other trees in Africa and elsewhere."

The Sirdar Rubber Co., Limited, have been registered in London, with £50,000 capital, with the object, in part, of developing the crude-rubber interest in the Soudan, which is expected to be more accessible in future, as a result of the recent successful British military operations in that region. Rubber has long been known to abound in the Soudan country, and the late Emin Pasha entertained hopes of developing a large business in its collection.

The most modest rubber-exploitation scheme yet reported is The Tapajós-Pará Rubber Forests, Limited, registered in London on October 4, with a capital of £7 in £1 shares. The object is to enter into an agreement with L. Everett, and to acquire and turn to account certain rubber estates in Brazil.

BABY RUBBER SOLES.—The fastening of little strips of rubber across the soles of infants' shoes at the ball of the foot is said to obviate the tendency to slip back that is experienced in their first efforts to walk.

RUBBER PLANTING IN COSTA RICA.

A RECENT visitor to New York was Mr. J. H. Conkling, engaged in general merchandise at Arenal, on the San Carlos river, in Costa Rica. Mr. Conkling, who has been a reader of THE INDIA RUBBER WORLD for six years, reports a growing interest in Costa Rica in the planting of rubber, especially since the government has offered a bonus of 25 centavos per tree planted. Meanwhile the native trees (*Castilloa elastica*) have been disappearing rapidly, in spite of the law intended for their preservation. The trouble, according to Mr. Conkling, has been due to the repeated extension of the time for putting the law into effect. Once a year it is announced that the cutting of rubber on other than private lands will be permitted for twelve months more, and during this time the rubber gatherers, thinking that it is their last chance at the trees, cut and bleed them recklessly, and with fatal effects. Mr. Conkling is unable to say what is the cost of making a rubber plantation, but an important fact is that very little expense is necessary to keep one in proper condition, after planting, until the trees are old enough to yield rubber. Another encouraging fact is the low cost of lands. It is unnecessary to remove all the timber in order to plant rubber, but only the undergrowth; the rubber trees soon reach such a height as to take the sun readily, while the return of the undergrowth protects the soil from the sun and keeps it moist—a condition most favorable for the rubber. Rubber tree seeds are readily obtainable, and young rubber seedlings may often be gathered in the forests. While coffee is to day the principal product exported from Costa Rica, Mr. Conkling thinks that rubber will become the most profitable crop to plant in that country.

RETURNS FROM "CASTILLOA ELASTICA."

THE experiments made with the native rubber-tree in Mexico, according to the prospectus of the Mexican Tropical Planters' Co., "have conclusively proven the two essential points: that the cultivation of *Castilloa elastica* is perfectly feasible, and that after the seventh or eighth year a sufficient quantity may be annually extracted to make the investment an extremely profitable one. About 200 trees can be properly accommodated on an acre of ground, each tree yielding from one to two pounds of rubber annually, with a value of 60 to 70 cents, American currency, per pound. The cost of gathering and preparing is slight, and after adding freight to market, 50 cents per pound, net, may be safely calculated on, giving, therefore, net returns to the planter of \$100 to \$200 per acre. The tree will continue to grow larger, with an increased yield each year, and a plantation fifteen years old should yield an average of five pounds per tree. No doubt the long time required before returns can be expected will deter some from planting rubber, but while it requires patient waiting, it is likewise the safest of all crops." The point should not be overlooked that the prices above given have never prevailed long at a time, and are always liable to a decline.

INFORMATION ABOUT BOLIVIA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I notice in your issue of November 1 a reference to Bolivian rubber lands, in which you also mention this consulate. If this consulate can at any time be of assistance to you in carrying on investigations regarding Bolivian rubber territories, I shall be much pleased to have you make the request. Very truly yours,

Bolivian Consulate, Philadelphia, Nov. 3, 1898. WILFRED H. SCHAFF.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States patent office, embodying applications of India-rubber or Gutta-percha to a greater or lesser extent, have been the following. It is not practicable here to do more than to note the use of rubber sufficiently to enable those who may feel interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 611,748.—Pneumatic Tire. Ysobel Western, Hamilton, Canada.

A pneumatic tire provided with a number of V-shaped ribs or teeth upon its outer surface, in combination with a series of narrow separate strips, one of which is placed at the bottom of each of the V-shaped grooves made in the tire.

No. 611,972.—Tool for Repairing Pneumatic Tires. Ellis R. Meeker, Elizabeth, N. J., assignor to the American Kit Co., New York, N. Y.

A tire repair tool, comprising a handle and a nest of guiding ferrules tapering from the handle, the larger end of the larger ferrule being detachably connected to the handle, and the ferrules being nested so as to telescope one within another in a direction toward the handle, but held against separation in the opposite direction.

No. 612,016.—Pneumatic Tire. Percy L. Clark, Chicago, Ill., assignor to the Morgan & Wright, same place.

The combination with a pneumatic tire of a rubber base attached to a suitable portion of the tire; a socket embedded within the rubber base and formed with an annular flange, a threaded opening and an annular seat; a packing ring fitted to the annular seat in the socket; and a valve-casing having a reduced and externally threaded end adapted to engage the screw-threaded opening of the socket and having also a shoulder adapted to be clamped down upon the packing ring.

No. 612,024.—Tire and Rim for Wheels. Samuel C. Davidson, Belfast, Ireland.

In a tire having a centrally-channeled inner face, a piece of folded textile material integral with the tire, the piece extending across the inner face of and closing the activity of the tire-channel and having a flap at each outer edge fitting against the corresponding side of the wheel-rim.

No. 612,051.—Bicycle Tire. Robert Piper, Toledo, Ohio.

A flexible bicycle tire, having a diaphragm extending across the same, dividing the interior thereof into two concentric compartments, forming an inner air-chamber, and an outer chamber, a metallic tube located in the outer compartment, the tube to be, specially elliptical in cross-section and formed of two plates, an outer plate coinciding with the tread of the tire, and an inner plate having side flanges coinciding with the tread of the tire, and means for securing the flanges to the edge of the outer plate, the whole providing the tire with an inner pneumatic chamber and an outer resilient metallic chamber.

No. 612,162.—Wheel for Vehicles. John A. Heany, Philadelphia, Pa.

In a wheel for vehicles, the combination of hub, spokes, stiff inner rim, still felly, and hollow pneumatic balls provided with flanges, holders to attach the flanges to the inner face of the felly and the outer face of the inner rim; whereby the pneumatic balls are held between them.

No. 612,103.—Wheel for Vehicles. John A. Heany, Philadelphia, Pa.

The combination of hub, spokes, rim, felly provided with grooves, the rim and felly being separated by an open space, a series of open or double ended rubber bands, open hoops sprung into the groove and its open ends being united for the purpose of spreading them by right and left handed screws; loop-clamps

setting through the rim and over the bands to bind the latter to the rim.

No. 612,148.—Means for Mending Punctures in Rubber Tires. Edwin S. Sperry, Warehouse Point, and Henry W. Olmstead, Hartford, Conn.

In combination, the interiorly threaded shank having a collar fixedly attached thereto, the collar adapted to be borne loosely on the shank, the shaft threaded exteriorly for screwing into the shank, and the upsetting nut, provided with operating-handles and carried upon a thread on the shaft.

No. 612,229.—Elastic Tire and Rim for Wheels. Joshua F. Barlow, Coventry, England.

The combination with an inflatable tire having enlarged or beaded laterally projecting edges, extending circumferentially at each side of same, transverse divisions in such edges, the termination of the enlarged edges of the tire being at different levels; of a rim having circumferential channels to receive and hold the enlarged edges of the tire, circumferential slots in the peripheral surfaces of the channels through which the sides of the tire extend, divisions in the peripheral surface of the channels, the surfaces on one side of the division being inclined to the bases of the channels where the slots are terminated and form stops for the edges of the tire when in place, the slots of the peripheral surfaces of the channels at the other sides of the divisions being open ended to permit entry therein of the lower-level terminations of the tire edges, the tire being circumferentially revolved until brought to rest by the stops with its enlarged edges in the channels.

No. 612,254.—Pneumatic Tire. Patrick A. Martin, Birmingham, England.

A pneumatic tire consisting of an inflatable cover having annular and inwardly directed thickened feet, or edges of soft material such as rubber, and a rim consisting of sheet metal having a flat central portion with a deep-troughed annular channel on each side of and at a right angle to the central portion, the open mouth of the channel being turned toward the inner periphery of the tire.

No. 612,264.—Tire for Cycles or other Vehicles. Oskar E. Nathansohn, Copenhagen, Denmark.

A tire consisting of three rings, two of the rings being placed side by side, an elastic tube enclosing the two rings, and the third ring being placed in engagement with the outside of the tube and between the other two rings and an outer envelope inclosing all the rings.

No. 612,358.—Hollow Tube for Pneumatic Tires. Richard A. Leigh, Bristol, R. I., assignor to the National India Rubber Co., same place.

The herein described method for closing the end of a hollow tube for bicycle-tires consisting in splitting the end of the tube to form two flaps, doubling one of the flaps into the tube and securing it to the inner surface of the opposing wall, doubling the other flap around the bent portion of the first mentioned flap, and securing it to the outer surface of the opposing wall.

No. 612,370.—Wheel Tire. Edward Claffey and Orle F. Koplin, Akron, Ohio, assignors of one-half to Jacob Pfeiffer, same place.

As a new article of manufacture, a wheel tire consisting of a rubber tube, a tube of woven asbestos next within the rubber tube and a core of spongy rubber within the asbestos tube, vulcanized therein to a different degree of hardness from the rubber tube.

No. 612,583.—Rim and Tire for Wheels. Samuel C. Davidson, Belfast, Ireland.

In a wheel a rim having a continuous channel around its outer face and an intumed flange at each side of its outer edges,

a tire entering the rim but not extending to bottom of the channel, the tire having an approximately flat inner face, and a continuous groove around each of its outer sides, and bolts or other equivalent device passed transversely through both sides of the rim at a distance from the bottom of the channel, whereby the edges of the sides are forced or drawn inward toward one another and against the sides of the tire and the intumed flanges into the grooves, the bolts giving support to the inner face of the tire, while allowing it to be forced between them in case of abnormal pressure.

No. 612,757.—Composition for Mending Tires. Fred. B. Parks, Grand Rapids, Mich., assignor to the F. B. Parks Tire Healing Company, same place.

The herein-described composition of matter for mending punctures in pneumatic tires, consisting of minute vegetable seeds suspended in glucose and glycerin injected into the tire.

No. 612,767.—Composite Tire and Means for Manufacturing Same. Jacob J. Brusenbenz, Chicago, Ill.

A composite pneumatic tire having a thickened tread portion built up of rubber material and metal sections embedded therein at intervals about the tread portion, each metal section comprising an inner and outer plate having a web connection extending between them transversely of the tire.

No. 612,785.—Vehicle Wheel. William H. Barker, Matamoras, Pa.

In a vehicle wheel of the class described, the combination of a rim provided around its outer circumference with sockets, cups seated in the sockets, a resilient tire comprising an inner section, a tread section and a spring metal band interposed between the same, the inner section being provided with apertures and the two sections being vulcanized at their outer edges and connected intermediately thereof by integral teats or projections extending through openings in the band, cups seated in the apertures of the inner tire section and brazed to the metal band, and resilience springs interposed between the rim and tire and seated in the cups.

No. 612,981.—Pneumatic Tire. Charles K. Welch, Coventry, England.

In a pneumatic tire, the combination with a fabric jacket and a tread portion partially covering the jacket, of a membrane of unvulcanized India rubber, or strips or rings of vulcanized India rubber arranged adjacent to the rim edges, and of a wheel rim provided with recesses to receive the strips.

MECHANICAL GOODS.

No. 611,767.—Hose Reel. George Bossow, New York, N. Y.

A hose reel comprising a supporting truck, rollers at one end thereof, extended portions adapted in conjunction with the rollers to support the truck upon end in a vertical position, and a drum rotatably mounted on the truck and arranged longitudinally of the latter, whereby the drum may occupy a vertical position corresponding to that of the truck when the latter is standing upon one end.

No. 612,394.—Gasket. Joseph A. Bernardi, Salem, Oreg.

The gasket formed of rubber or the like and having the flat upper side and the under side inclined downwardly and outwardly from its inner to its outer edge and also having the ribs or flanges on its under side; the whole being adapted for interposition between a bowl and a slab.

No. 612,687.—Packing for Pump-Pistons. Frederick Van den Bosch, Parker's Landing, Pa.

The improved cup or ring for pump-pistons, of the class described, comprising a body formed of fibrous material, and a base ring, consisting of vulcanized rubber, which is united with the lower edge of such fibrous body and possesses greater rigidity than the same.

No. 612,765.—Billiard-Cushion. Moses Bensinger, Chicago, Ill., assignor to the Brunswick-Balke-Clender Company, same place and Cincinnati, Ohio.

In a billiard cushion-strip, the combination with the usual molded mass of a suitable rubber compound, of a face hardening device or means, comprising a wire located within the molded mass and at the vicinity of the nose, or upper working edge of the cushion strip, and a ribbon-like strip of canvas, or other nonstretchable textile fabric, having its upper edge portion tightly wrapped round about the wire and its main portion, extending thence downwardly toward the root of the cushion.

CLOTHING.

No. 612,086.—Waterproof Fabric. John H. Stevens, Newark, N. J., assignor to the Celluloid Co., New York, N. Y., a corporation of New Jersey.

A waterproof fabric, coated or impregnated with a pyroxylin compound containing castor-oil and a salt containing halogen element.

No. 612,087.—Waterproof Fabric. John H. Stevens, Newark, N. J., assignor to the Celluloid Co., New York, N. Y., a corporation of New Jersey.

A fabric waterproofed by a pyroxylin compound which contains pyroxylin, castor oil and a salt containing salicylate of soda.

BOOTS AND SHOES.

No. 612,430.—Fastener for Overshoes. Alfred B. Smith, Topeka, Kansas.

The combination with an overshoe provided with an opening in its heel portion, of a fastener consisting of a strip of metal having its end portions bent in opposite directions at an obtuse angle to its middle portion, the lower bent portion extending through the opening and projecting forwardly to engage the heel of an inner shoe, and the end of the upper end portion being bent forwardly toward the overshoe and a rivet passing through the rubber shoe and the fastener near the upper end of its middle portion.

DRUGGISTS' SUNDRIES.

No. 612,741.—Rubber Glove. Charles E. Longden, New Haven, Conn., assignor to the Seamless Rubber Co., same place.

A rubber glove comprising a hand portion formed from rubber coated material and seamless rubber fingers of lighter material than the hand portion, to which they are permanently secured.

No. 613,222.—Atomizer. Charles M. Blackman, New York, N. Y.

In an atomizer or syringe, the combination of a plurality of liquid reservoirs disposed one within the other, the outer reservoir having a neck, and the inner reservoir being provided at its top with a ledge and supported thereby upon the neck of the outer reservoir, a cap common to and covering the top of both reservoirs and a fluid forcing device secured to the cap.

STAMPS.

No. 613,064.—Flexible Sheet for Rubber Stereotype Bases. William A. Force, New York, N. Y.

A molded sheet for rubber stereotype bases, comprising an integral body of soft rubber provided with two sets of parallel severing grooves in one face of varying distances apart the grooves of the sets crossing at right angles to one another and dividing the surface up into rectangular blocks of square and oblong form, the sheet being molded and vulcanized with the grooves so that the blocks present smooth and finished surfaces.

MISCELLANEOUS.

No. 613,066.—Bottle Stopper. Thomas Howard, Ashland, Ky., assignor of one half to William S. Harrison, Louisville, Ky.

A bottle stopper formed in two parts, detachably connected together and provided with an air chamber there between, and having at approximately each end an aperture formed in the body portion thereof for the reception of uncorking and removing instruments, and a sealing disk intermediate its length.

No. 611,730.—Soft Tread Horseshoes. Milton C. Gray, Omaha, Neb.

As a new article of manufacture, a perforated frog shield retaining arms extending from the shield, and a packing-filler secured to form part of the shield.

SINGLE TUBE TIRES WINNING FAVOR IN FRANCE.

IN discussing the status of the single tube bicycle tire in France, Mr. George R. Ostheimer, of Paris, said to THE INDIA RUBBER WORLD recently, while on a visit to the United States:

"The single tube tire has had greater obstacles to overcome in France, probably, than anywhere else. In addition to the fact that detachable tires were the first to come into use, and that the French people, like other Europeans, are slow to adopt new things, there have been some barriers to the introduction of the single tube tire in France which have not existed elsewhere.

"In the first place, three of the leading French bicycle concerns formed a syndicate, under an agreement to use only the Dunlop tires on their wheels. These were Clement & Co., makers of the "Clement" wheels, A. Darracq, maker of the "Gladiator," and Humber (France). When it is considered that these firms control more than half the bicycle trade of France—possibly two-thirds—and that their example doubtless has had an effect even upon that portion of the trade not under their direct control, it is easy to see how potential their action must have been in discouraging the sale of single tubes.

"You know that the Dunlop people organized a company in France ('Compagnie Française Pneumatiques Dunlop') with a capitalization of \$3,500,000. Their first step was to seize tires made by several French rubber concerns, against whom they brought suit for infringement. The defendants combined to protect their interests, the litigation ending in a decision against the validity of the Dunlop patents in France. As a result, nearly every rubber factory in that country began making tires of the Dunlop type, and generally at a much lower price than is charged by the Dunlop company. Consequently, when a good single tube tire is offered in Paris to-day, its price is higher than that of many makes of detachable tires, whereas in England the lowest prices for tires of this class are still much higher than the single tube sort. While this patent decision gave the Dunlop company a setback, they still have the powerful support of the Clement-Gladiator-Humber combination.

"The tire repair shops in France are still controlled for the most part by interests unfriendly to the single tube tires, and every attempt is made to cultivate a popular belief that the single tubes are hard to repair. But even when a favorable impression has been made by the single tube it does not follow that the cyclist will at once invest in a pair. If his wheel rims have been channeled for Dunlop tires, as is most likely to be the case, he will feel like continuing to use the Dunlops until the need comes for a new wheel. The introduction of single tubes anywhere in Europe must come about through influencing the manufacturers of bicycles to use them as a part of their equipment, and it will be found easier to influence the producers on a small scale than the large manufacturers. As for American tires, it must be remembered that France has two schedules of import duties—a 'general' and a 'minimum' rate—and that the former is applied, as a matter of discrimination, to goods coming in from the United States."

In spite of this formidable list of discouraging influences, Mr. Ostheimer expressed the firm conviction that single tube tires were winning favor in France and constantly finding wider use. Their introduction has progressed slowly, as was the case at first with solid rubber tires on vehicles; he thought it not improbable that in the end single tubes might suddenly become adopted on a large scale, as was also the case with the vehicle

tires. Better facilities exist now than formerly for getting these tires repaired, while individual cyclists are learning to make repairs themselves. Mr. Ostheimer, by the way, is actively interested in the tire business. He is the resident partner in Paris—at 40 rue de l'Echiquier—of the commission house of Ostheimer Brothers, of Philadelphia. Some time ago this firm entered into relations with the Hartford Rubber Works, taking the European agency for the "Hartford" tires. In order to avoid the payment of a heavy duty—2.50 francs per kilo, or about \$1 for a pair of tires—the Messrs. Ostheimer are having these tires manufactured, under a royalty contract, by one of the leading French rubber concerns. This arrangement has now been in force during two seasons or a little more, and the views expressed by Mr. Ostheimer are the result of the experience gained by him through actual participation in the trade.

As to the extent of the bicycle trade in France, Mr. Ostheimer, while not wishing to speak positively, thought that perhaps 200,000 bicycles were sold annually, the greater part being of domestic production. Wheels are imported from Germany, England, and the United States, but the sum total is not large. As for American wheels, it is not worth while to send over any but of the best class, nor is it well to sell machines without first having made arrangements to have them taken care of. The cyclist who buys a wheel for which he cannot readily buy parts in the event of an accident to it will help to injure the trade in American wheels thereafter, no matter how cheaply the wheel may have been bought at the beginning. Any tires imported from England are, of course, "Dunlops." But the tires most widely in use in Germany are of the "clincher" type, such, for instance, as the "Continental" tire, made by the great rubber company of that name in Hanover.

WHAT CAUSED THE LEAKS?

IN the city of Toronto some of the cycle companies were considerably worked up recently over the fact that tires on their wheels would not keep the air, says a Canadian paper. It was thought that the company which supplied the tires was responsible, there probably being some defect in the rubber. An examination of tires which had not been used showed that there was not a single leak, or defect, of any kind. The old tires leaked just at the joining. To ascertain if the leaks occurred in the same spot four or five wheels were set out on the asphalt pavement in front of the rubber company's premises, with the joint next to the pavement. In a very short time all tires were down, the heat of the asphalt having, apparently, melted the preparation used in making the joint.

It would be interesting to know exactly whose make these tires were and whether they really did leak at the joints. It is hardly possible that the heat of the sun absorbed by asphalt, would be strong enough to melt vulcanized India-rubber, for that would take nearly six hundred degrees of heat. Indeed a moderate degree of heat would simply cause the rubber to vulcanize all the harder. If, however, a Gutta-percha cement had been used in the joints there would have been sufficient heat there to cause it to run, or it may have been that some bastard gum, like Almedeina, had been used in the friction and had melted.

WHAT BOSTON RUBBER COST.

Cash	\$1,000,000
Preferred shares—8 per cent.....	4,125,000
Common shares.....	3,500,000
Debentures—5 per cent.....	5,000,000

Total..... \$13,625,000

THE last issue of stock by the United States Rubber Co., as already stated, included 41,250 shares of preferred and 35,000 shares of common. In making an application to the New York Stock Exchange to have the new issue listed, the officers of the rubber company gave some details of interest, which had not before been made known from an authentic source.

"These shares," said the circular, "together with \$1,000,000 paid in cash, are in payment for the entire capital stock of \$5,000,000 of the Boston Rubber Shoe Co., a Massachusetts corporation, by which purchase of stock we acquire title to the entire properties of the Boston Rubber Shoe Co. Prior to the sale of said stock, the Boston Rubber Shoe Co. issued to its stockholders \$5,000,000 of 5 per cent. ten year gold debenture bonds.

"The property of the Boston Rubber Shoe Co. consists of two large fully equipped factories, No. 1, situated at Malden, Mass., and No. 2 at Melrose, Mass. The daily capacity of No. 1 is 32,000 pairs of rubber boots and shoes, and of No. 2, 23,000 pairs of rubber boots and shoes, making a total of 55,000 pairs. There is upwards of 130 acres of land and 85 tenements. The number of employes at both factories is approximately 3600. The average weekly pay roll would be in the vicinity of \$30,000 to \$35,000. In addition to the above, the company has net quick assets of a cash value of over \$5,000,000.

"The assets and liabilities of the Boston Rubber Shoe Co., according to its statement of May 1, 1898, were as follows:

ASSETS.	
Real estate:	
Malden.....	\$318,699.36
Malden—Last Company.....	11,800.64
Melrose.....	388,325.00
Land and water power, buildings, machinery:	
Malden.....	203,030.94
Malden—Last Company.....	6,969.06
Melrose.....	125,000.00
Other assets:	
Cash and debts receivable.....	2,677,043.15
Manufactures, merchandise, material and stock in process.....	2,538,293.77
Miscellaneous.....	480,000.00
Total.....	\$6,749,161.92

LIABILITIES.	
Capital stock.....	\$5,000,000.00
Balance profit and loss.....	1,549,161.92
Reserve for depreciation.....	200,000.00
Total.....	\$6,749,161.92

"The total net sales of the Boston Rubber Shoe Co. for the past three years have been: 1895-96, \$8,768,000; 1896-97, \$6,376,000; 1897-98, \$7,993,000."

The net earnings of the Boston Rubber Shoe Co. are stated in the letter to the stock exchange to have been as follows:

For the year ending May 1, 1896.....	\$1,800,000
For the year ending May 1, 1897.....	1,500,000
For the year ending May 1, 1898.....	1,270,000
Making an annual average of.....	\$1,523,333.

"During the three years above mentioned, the dividends paid by the Boston Rubber Shoe Co. have been 10 per cent. per annum on their capital stock of \$5,000,000, which would be \$500,000 per annum."

RECENT TRADE PUBLICATIONS.

THE B. F. GOODRICH COMPANY. RUBBER COVERED COUCH PRESS Squeeze Rolls. Akron, Ohio. [Paper. 3 3/4" x 6". 36 pp.]

HERE is a collection of letters from a number of paper mill owners, expressing favorable opinions of the rubber couch rolls manufactured and installed by the Akron company during the past fourteen years. Some of the letters report ten years' active service of the rolls in use by the writers.

CAOUTCHOUC. CATALOGUE GÉNÉRAL. A. MAUREL & FILS, 140, rue de Rivoli, Paris. [Paper. 6" x 8 1/2". 24 pp.]

THIS long established and successful French rubber house, with a factory at Boulogne sur Seine, have the satisfaction of being purveyors to the ministries of war, marine, colonies, the interior, hospitals, etc. Their products are varied in the line of soft rubber goods and particularly in waterproof garments for men, women, and children, in which the house make a specialty of keeping abreast with the latest fashions. Prices are given of all their products, together with plates of styles in garments.

G. & J. TIRES. 1899. PIONEER DETACHABLE DOUBLE TUBE TIRES. Gormully & Jeffery Manufacturing Co., Chicago. [Paper. 3 3/4" x 5 1/2". 16 pp.]

THE tire described here is of interest as being one of the few of the many brands of detachable tires on the market only a few years ago that has retained a place in the American trade despite the popularity of the single tube style. There has been a decided reduction in prices, as shown by this comparison of prices for 28-inch tires, less than 2 inches in diameter:

	1897.	1899.
Road tires.....per pair	\$12.00	\$10.00
Heavy tread.....	14.00	11.00
Tandem.....	14.00	11.50

These tires, as hitherto, are manufactured by several important rubber firms.

ALPHA AND OMEGA SUPERIOR RUBBER SPECIALTIES, MANUFACTURED by Parker, Stearns & Sutton, New York. [Paper. 3 3/4" x 5 1/2". 24 pp.]

A NEW descriptive illustrated list, without prices, of continuous flow syringes, fountain syringes, hot water bottles, a new article in dress shields, and other products of a long established and widely known house.

CATALOGUES RECEIVED.

NEW JERSEY Car Spring and Rubber Co. (Chicago office)=Good or Bad—Which? [relating to garden hose.] Folder.

Jersey City Crucible Co., Jersey City, N. J.=Graphite as a Lubricant. 32 pp.

The B. F. Goodrich Co., Akron, Ohio=Perfection in Rubber Bottles. 4 pp.

Crescent Rubber Co., Nos. 162-163 South street, New York=[Catalogue and Price-List.] 36 pp.

George Watkinson & Co., Philadelphia.=Net Prices of the "Thistle Brand" of Rubber Boots and Shoes. Folder.

Dubuque Rubber and Belting Co., Dubuque, Iowa=Price-List of Mechanical Steam-Vulcanized Rubber Goods. 65 pp.

The American Pegamoid Co., New York=What is "Pegamoid"? 25 pp. Also: "Pegamoid" Paints and Lacquers. 15 pp. Also: Some Remarks on the Subject of Pegamoid, by Prof. Peter T. Austen, PH.D. 14 pp.

Rubber Carriage Tire Corporation, New York=Self Adjusting Tires. 8 pp.

COST OF RUBBER LANDS IN MEXICO.—Apropos of the great interest in investment in rubber lands in Mexico, and the high prices quoted by some of the development companies, the Philadelphia Commercial Museum publishes a report to the effect that lands of the finest class, but covered with jungle, adapted to the growth of coffee, sugar, rubber, tobacco, etc., are worth in large tracts about \$8 per hectare (= 2.47 acres).

FARMERS' SONS AS RUBBER WORKERS.

THE manufacture of rubber shoes has been confined from the beginning to so narrow an area in the East, and so near to the starting point of the industry, that some people have considered success in it impossible in any other section. But within the past year or two a rubber-shoe factory has come into existence in the Indiana town of Mishawaka, not far from Chicago, in charge of an Eastern man of unusually wide experience—Mr. Emmett A. Saunders. Knowing the new enterprise to have proved successful, an INDIA RUBBER WORLD man who met Mr. Saunders lately asked him whether the location of the Mishawaka factory in the West had proved of any special advantage, in the way of attracting patronage from a particular section.

"I do not know that it has," was the reply. "I am of the belief that it is the man in charge of an industry and the quality of goods that he makes that determine success in manufacturing and not the location. Dr. Goodrich went West and established a rubber factory successfully at Akron, but such a man would have succeeded anywhere. So would Mr. Banigan, and so would Mr. Converse. I became associated with the Mishawaka Woolen Manufacturing Co., not because it was a western concern, but because they had a good trade to start with. They were making wool boots and buying large quantities of rubber 'overs' to sell with them, but since we have become associated, both wool boots and rubbers are made and sold under one management, with certain marked advantages."

Mr. Saunders entertains some views about the labor situation in the West, however, that are interesting, especially as coming from a born New Englander, who has lived always in the atmosphere of a manufacturing community. "The farmers' sons in the Western states make as satisfactory workers in a mill as I have ever seen," said Mr. Saunders. "The early training that a farm-boy gets is of a very practical kind. The farmer has to make or mend a thousand things in the course of a lifetime that call for tools of some sort, and he cannot always get the right sort of tools, either. He hasn't time to leave his farm; he may not be able to pay a skilled workman to do his repairing. Hence he develops traits of ingenuity and an ability to adapt himself to circumstances that is perpetuated in his children often in an enlarged degree. For this reason, when a farmer's sons become too numerous for the old farm to support them all, and one goes to work in a factory, he is full of practical sense, resourceful, and able readily to overcome obstacles. You cannot drive these young westerners at their work—they are too independent for that—but they are quick to see whether their employer or superintendent knows his business, and especially if he knows more about it than they do, in which case he has their admiration and they appear pleased to follow his directions."

Mr. Saunders found it necessary to remove from the East very few of the hands needed for the new rubber factory, and these find the cost of living in their new location much lower than is paid for the same items in the average New England manufacturing town.

RECORD OF BUSINESS TROUBLES.

THE business of the Pacific Rubber Co., manufacturers of mackintoshes, cravenettes, and rubber clothing, at Elizabeth, N. J., has been placed in the hands of a receiver, on the application of Sydney G. Hartshorne, a stockholder and a creditor of the company. Vice Chancellor Emery, at Newark, appointed as receiver Meline W. Halsey, treasurer of the Union

County Savings Bank. The liabilities have been reported to be \$30,000, with the possibility that the assets would be as large, but it is not expected that the business will be continued. The corporation was formed in 1894, and had an office and salesroom at No. 621 Broadway, New York.

* * *

In the court of chancery at Trenton, N. J., Vice Chancellor Reed on November 13 filed an opinion in which he holds that ex-Mayor Frank A. Magowan, while president of the Trenton Rubber Co., overdrew his account to the extent of at least \$150,000. The Vice Chancellor holds William P. Hayes, now warden of the state hospital for the insane, and formerly treasurer of the Trenton Rubber Co., legally liable for \$3600 of this overdraft. Allen Magowan, the ex-mayor's father, is held to be legally responsible for \$16,990.07 of his son's overdrafts. The responsibility of Mr. Hayes and the elder Magowan is based on the fact that they were directors of the company, and either knew or ought to have known that the ex-mayor was using the company's funds for his own benefit. That they are not held responsible in a larger sum is because under the law directors of a company are responsible only to the owners of the corporation for permitting funds to be misused, except in those cases where they know the company to be insolvent. Then they have a duty to perform to the company's creditors. The responsibility of Allen Magowan and Hayes was incurred during the time that the rubber company was in the hands of a receiver, between August 2 and September 26, 1895. The suit in which this decision is rendered was brought by John T. Bird, as receiver for the rubber company, with the idea of holding Allen Magowan and Hayes responsible for President Magowan's overdrafts, as above stated.

* * *

It appears probable that the assets of the Elastic Tip Co. (Boston), as shown by their books at the time of their assignment several months ago, will show a marked shrinkage. In July a statement was published showing liabilities of \$335,005 and contingent liabilities of \$395,000, with assets of \$532,260. A report published recently estimates the assets as only \$50,000, the bills receivable having proved worthless and the merchandise account overestimated. The liabilities, according to the same report, aggregate \$660,000.

* * *

HOADLEY & Co., shipping and commission merchants, No. 19 Liberty street, New York, made an assignment on November 15 to Antonio S. Moreira, without preferences. The firm dates back more than fifty years, and since 1893 has been composed of Russell H. Hoadley—whose father entered the house in 1861—and Chester Munroe. They had an extensive trade with Central and South America, with connections in London, and were importers of Central rubbers. In June the firm claimed to be worth \$200,000, and their assignment is said to be due to the failure of a Paris concern.

A TIRE FOR THE GERMAN ARMY.

THE tire decided upon by the German authorities for use by the army and other government servants having to traverse long distances, is the Brauns-Dauerreifen, made at Dresden. The tire is said to be made with an ordinary outer cover, which encloses a tire made as to its lower half of soft spongy rubber, springy and resilient, while that half nearest the rim is made of solid segments of cork, which are severed transversely at places and act as buffers, receiving the concussion of the tire nearest the ground. The tire may be fitted to a rim or can be cemented thereto.

THE EDITOR'S BOOK-TABLE.

PROGRESS REPORT OF FOREST ADMINISTRATION IN THE PROVINCE OF ASSAM, for the Year 1896-97. By A. L. Home, Conservator of Forests. Calcutta: Superintendent of Government Printing. [Boards. Follo. v+97 +6 pp., with map. Price 1 rupee.]

THIS volume includes, in addition to its other features, a continuation of the details in regard to the plantations of *Ficus elastica* at Charduar and Kulsu which have appeared regularly in the annual reports of the Assam forest department since 1873, when the Indian government first took up the subject of rubber-cultivation. While the older trees in those plantations have reached amazing dimensions—large numbers of them averaging 72 feet in height and 6½ feet in girth—the rate of yield per tree as yet is not encouraging, besides which the upkeep of the plantations is expensive on account of many unexpected difficulties. Not the least of these is the fondness of elephants for uprooting the young rubber-trees, while some of the larger ones were thrown down by an earthquake. The report includes a "Brief Account of How Rubber Trees are Grown in Assam," by D. P. Copeland, deputy conservator of forests, which is likely to be quoted for some time to come as a practical guide to planters. By the way, it appears that a good deal of planting of *Ficus elastica* has been done on private account in Assam.

PERAK MUSEUM NOTES, VOL. II—PART 2. ON RUBBER AND RAMIE Cultivation in Perak, by L. [eonard] Wray, Jr., . . . together with Papers on *Ficus elastica* and Tapping of Pará [Rubber] Trees at Kuala Kangsar, by A. B. Stephens and R. Derby. Taiping: Government Printing Office. [Paper. 8vo. 81-128 pp. Price 25 cents.]

MR. WRAY, who is the curator of the Perak museum, and who has published several papers on India-rubber in the Malay peninsula reports favorably on experiments with Pará rubber in that part of the world, while he does not regard the history of the Ceará rubber in the same districts as encouraging. Mr. Derby reports that the cultivated rubber-trees lately tapped by him yielded an average of 10 ounces for those six years old, up to 3 pounds for those twelve years old. Mr. Stephens favors the planting of waste places with *Ficus elastica*, but criticises the methods of planting practised in Assam. The Perak museum have large orders for Pará rubber tree seeds from intending planters.

BULLETIN OF MISCELLANEOUS INFORMATION, TRINIDAD ROYAL Botanic Gardens. August, 1898. Trinidad: Government Printing Office. [Paper. 8vo. 113-131 pp.]

IN this bulletin the superintendent of the Trinidad gardens, Mr. J. H. Hart, F. L. S., has compiled some leading facts relative to the rubber species presumably suited to the West Indies, for the benefit of the colonists who may feel an interest in their cultivation. Superintendent Hart also presents a short article on rubber-coagulation, pointing to the probable success of the mechanical process which he is developing.

MR. CLARKE DOOLEY has contributed to *Appletons' Popular Science Monthly* for September a "Sketch of Charles Goodyear," which, in spite of the limits of a magazine article, probably is the most comprehensive account of the great inventor's career that has yet been written. Mr. Dooley brings to his work an intense admiration for the character of the subject of his sketch, which has led him into a most painstaking study of the biographical materials available, whether used or unused before, and the result is a demonstration that Charles Goodyear was something more than "a mere inventor"; he was actuated throughout life by high ideals, and by a wish to become a benefactor of his race. That he did become one, and in a very high degree, Mr. Dooley has undertaken to prove, and it must be said that he has made out a good case. By the way, it is shown

in this paper that, instead of dying insolvent, Goodyear left an estate worth several hundred thousand dollars, which was invested profitably in the shoe-sewing machinery now known throughout the world by the name of "Goodyear." A portrait accompanies Mr. Dooley's article.

HISTORY OF ONE RUBBER INVENTION.

LIEUTENANT HOBSON refused to give up hope, until the very last, of being able to make good use of rubber air bags in raising the sunken Spanish warships off Santiago de Cuba, and it may be that, even after the navy department dismissed all his plans as impracticable, he still believes in them. The rubber manufacturers, however, never were very enthusiastic in the matter, and some of the leading concerns declined to undertake to get up such bags as Hobson desired. A correspondent of THE INDIA RUBBER WORLD writes that a certain rubber concern a few years ago spent a large amount of money in experimenting with air bags of the class ordered more recently by Lieutenant Hobson, but without success. At least they couldn't produce any that would stand over 15 pounds pressure to the square inch, although the very best stock was used. Our correspondent suggests that "a series of lengths of hose coiled and coupled, say 20 inches in diameter, might solve the problem—but rubber bags, never."

Several years ago THE INDIA RUBBER WORLD contained an account of the efforts of some westerners to get up a company in New York to exploit a patent issued to one of them for rubber bags for raising ships—efforts which failed, by the way. The story is told in the trade of the way in which their invention came about. It is to the effect that a boat load of cattle sunk in a river near which the inventor lived, resulting in the loss of all on board. After several days, however, boat and cattle came to the surface, much to the surprise of every one who saw it. One man, more curious than the rest, speared one of the carcasses—which by that time had become much swollen—only to see it collapse as the gases from decomposition escaped. This circumstance suggested to his mind bags which could be inflated more readily than drowned cows, for use in raising sunken boats.

NOVELTY IN SPREADING MACHINERY.

A REPORT comes from England regarding a new specialty in rubber-making machinery, manufactured at the Brookfield Iron works, Lancashire. With this new machine it is said to be possible to work with steam up to 150 pounds, the steam in this case being carried through small tubes which are led through the interior of pipes of larger diameter. The cloth, in passing over these pipes after spreading has all the solvent quickly driven off, the evaporation taking place above and below previous to the winding of the cloth on the drum. The merit of the machine is that it overcomes the difficulty, hitherto experienced in rubber-manufacture, of getting sufficient heat in the drying chest to drive off the solvent after spreading.

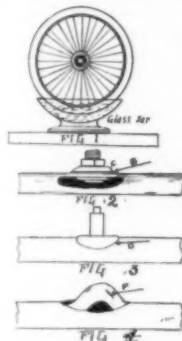
UNHEALTHFUL WORK.—A British foreign office report on the Congo Independent State emphasizes the unhealthfulness of the country. The European employés of the great rubber-trading company, the Société du Haut Congo, are engaged for two years each, but their average service has not exceeded seven months, after which, if not buried, they are confirmed invalids. The actual work of rubber-gathering is, of course, performed by the natives, but the latter work effectively only under the supervision of outsiders.

PRACTICAL HINTS FROM A TIRE-REPAIR SHOP.

By B. F. Fells (Boston).

I. THE TREATMENT OF PUNCTURES.

TO locate a puncture in a pneumatic tire, fill a fifty-cent glass dish with water, and turn the inflated tire through the water in this dish, as in Figure 1, examining the tire through the glass sides for air-bubbles. The valve-stem may leak, as at B, in Figure 2. This is remedied by screwing the flat nut C tighter on the washer. If the tire is double, the stem of the inner tube may leak at D. A little cement can be pushed under the loose base of the stem, closing the leak, or the base may be wholly loosened with benzine and cemented anew.



FIGS. 1, 2, 3 AND 4.

If a puncture is located in the body part of the inner tube, draw the latter through the outer tube and then the puncture can be plugged with the usual patch. To jacket a puncture, the appliance consists of nothing more or less than a rubber tube which is placed over the leak. Then when the tube is pumped up, no matter how many inequalities there may be, the air in the tube fills them all, and also puts on a nice, even pressure. It has not been found necessary to pump up the tube very hard, and a great and unnecessary pressure can be put on the tube in this manner by pumping up the tube too much.

It is unwise to try to repair a tire until it is certain that there is nothing wrong with the valve. Though the tire may have left the factory with the valve air-tight, it may leak after a few months through the leather washer on the valve-seat shrinking or wearing out. It will not do to replace the washer with one cut out with a knife; buy good washers. If the valve still leaks, see if there is not a flaw in the washer, or if one side is not thinner than the other. Do all this before overhauling the valve. A valve may often be fixed in five minutes by putting in a new washer.

For waterproofing fabric tires I use the following process: I pound together, in a mortar, 12.4 ounces potash alum and 11.81 ounces acetate of lead until they are liquescent; then add 7.18 ounces of bichromate of potash, and 7.18 ounces of glauher's salt (sodium sulphate); continue pounding and add 4.23 ounces of calcined magnesia and 1.32 gallons of water. When the mixture is well prepared, it is poured into 13.2 gallons of water and stirred for twenty minutes, which effects a thorough dissolution of the solid substances. Dissolve in another utensil 5.28 ounces tannin, 1.76 ounces gelatine, 3.52 ounces yellow resin, and 13.2 gallons of rain water; add 26.4 gallons of common water and stir well; pour into this the first mixture and brew the whole twenty minutes. The tires are immersed in this liquid, which is constantly stirred until they are impregnated in the solution.

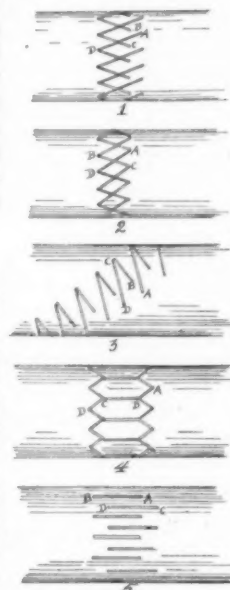
II. METHODS OF SEWING TIRES.

SOME plans for sewing the butts of tires are given here. No. 1 shows a double cross system, which can be made by starting the lace at A, crossing and returning to B, whence the rest can be followed by observing the plan ending at C and D. Another is shown in No. 2. To make this, begin at A, go to B with single lace, and end at C and D. A style of union is presented in No. 3, consisting in joining the ends at an angle. To lace,

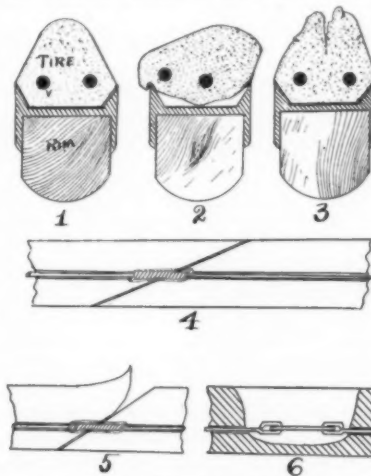
begin at A, go to C and onward, as indicated, completing at C and D. Little lace is required for this style of union. An effective sort of lacing is illustrated in No. 4, which can be sewed by starting at A with a double lace, going to B, thence following out the order presented, ending at C and D. In No. 5 is shown a type of lacing that will do for general tire work. The idea of this manner of sewing is to distribute the strain of the lacings as much as possible. To sew, begin at B with one lace and work over to D with the straight laps. Then begin at A and lace the cross laps, ending at C.

III. REPAIRING SOLID RUBBER TIRES.

FIGURE 1 is a section of a solid rubber tire on a vehicle-wheel. Figure 2 shows the tire pushed to one side over the flange of the channel. This trouble is due to the tire working loose from its seat, by the connecting wires breaking or the joints opening. To fix this, first remove the tire from the channel as far as the tire is loose, then scrape all remnants of cement from both tire and tire-seat, and cleanse thoroughly. The scraping can be done with a broad knife-blade. A solution of naphtha or similar liquid makes a good cleansing mixture, to be applied with a sponge or cloth. Next examine the tire and locate any defects which may exist in that part which has become loose. If none are found, the cement may be applied and the tire replaced. As printed directions for use accompany each can of cement, details need not be given here.



PLANS FOR SEWING TIRES.



RUBBER TIRE REPAIR SERVICE.

final cleaning with benzine or naphtha. The inside of the split can be reached with a sponge or piece of cloth fixed to the end of a stick. After drying out, saturate the sides of the split with cement and close up the tire, holding it by means of

If a tire is split, as shown in Figure 3, and the split does not extend beyond a few inches, the defect can be vulcanized over. First remove dirt and loose particles by rubbing the surfaces and inside of the split with coarse burlap, thus roughening the parts. Then brush off adhering substances, and follow with a

winding with tape. Let the cement dry and then sew through from side to side, straight through the split, with a sail-cloth needle and strong thread, sewing about $\frac{1}{8}$ inch from the edge of the split and far enough down on the side to insure strength. Make the stitches about $\frac{1}{8}$ inch apart. The edges of the split and the stitching can be protected and strengthened by vulcanizing. All gaps can be closed with crude stock.

The retaining wires in solid rubber tires are usually joined as shown in Figure 4. The splice of the tire and the splice of the wire are together and the latter readily found in case it is necessary to open it. When the flap loosens of itself and opens as in Figure 5, it should be repaired at once. Usually a resetting and cementing will suffice. If the tire is loose on the rim, and if the butts of the union are rough and worn, the flaps should be opened and a sufficient shaving taken off from each to smooth the butts and to allow the tire to be drawn tight in its place. This requires that the retaining wires be opened at the joint and rejoined. This may be done readily with pliers. The butts of the tire union are now cemented and closed. The flaps can be held down until dry by means of winding with tape.

Vehicles are sometimes brought to the repair-shop with one retaining wire broken in one of the tires. If not repaired, the ends of the wire will work through the tire and damage it. I usually make an incision where the fracture is and after getting hold of the ends of the wire, loop them and put in a link, as in Figure 6. The incision is then closed with cement and the gap vulcanized. No trace of the repair remains, if done right; and the job will prove serviceable as long as the tire lasts.

A CHANGE IN FIRM STYLE.

THE rubber and shipping trades have been notified by Mr. T. J. Shipton Green that he has transferred to the firm of Edmund Reeks & Co., for liquidation, all the affairs of the business heretofore carried on by him under the name of Shipton Green. The new firm consists of Edmund Reeks and Harry Anderson Astlett, who will continue the rubber importing business in New York and Liverpool, and also to act as agents for the Red Cross line of steamers to Brazil and the Red Cross Iquitos Steamship Co., Limited. Mr. Reeks gained his first experience in the rubber trade in Pará, with Singlehurst, Brocklehurst & Co., going later with Shipton Green, in whose interest he has spent several years each in Pará and in New York. In July, 1897, he turned over the Pará house of the firm to Mr. Astlett, who also at one time had been with Singlehurst, Brocklehurst & Co. and returned to New York. The offices hitherto occupied by Shipton Green—Nos. 113-117 Pearl street, New York—will be retained, in charge of Mr. Reeks, while Mr. Astlett will remain in charge of the business in Pará. Mr. T. J. Shipton Green, who now resides in London, will be a special partner in the new firm.

EGGERS & CARLSEN SELL OUT.

THE firm of Eggers & Carlsen, manufacturers of fine rubber goods and druggists' sundries, who began business at the first of the year at No. 147 Center street, New York, announce the sale of their entire stock of merchandise, property, and good will to Goodyear's India Rubber Glove Manufacturing Co. The business of Eggers & Carlsen will be liquidated by J. Carlsen, at the Center street address. In this connection it is interesting to note that Mr. Eggers has gone with the Goodyear Glove company as manager of their druggists' sundries department, where his long and intimate acquaintance with the trade will not fail to be of great value. The firm promise to issue soon an illustrated catalogue.

HE TAKES OUT THE "TUSHLAR."

TO THE EDITOR OF THE INDIA RUBBER WORLD: I hear that some of the rubber concerns in the United States have started lately to manufacture golf balls, but unless they know how to use Gutta-percha as it is done in England they will be unable to compete with the foreign ball. There are several kinds of Gutta-percha; the kind usually used is called Pernang. This is sold in London at from 8 pence to 1 shilling and 2 pence per pound. There is a cheaper kind of red Gutta called Manila. This is sold in London at from 2 pence to 8 pence per pound. This Gutta-percha is put through a process abstracting the rosin known in the different golf ball factories in England as Tushlar. This Tushlar is used in rubber compositions, and is therefore not counted as a shrinkage. After the rosin is abstracted the Gutta is washed in a masticator, a very heavy machine with a fluted roller cased in cylinder with luke warm water continually running through it till the gum is free from bark and other foreign substances.

The Gutta is then taken to a machine called the scarifier and there it is wound around two spiral rolls till thoroughly dry. It is then taken and put through a coring machine, an ordinary tubing machine and drawn out in long rods through a long tank of cold water. The rods are then chopped up in convenient pieces each large enough to make a single golf ball. The ball is molded in the two half mold, the mold being usually poured from a No. 1 Babbitt metal formed from a still matrix made exactly from one-half of the ball and correct size. The ball should weigh 27 and $27\frac{1}{2}$ pennyweights. There are sometimes found in the market balls of less weight, but they are considered inferior to the full-sized ball.

The balls are finished by a trimming machine and the mark left by the trimming is plowed making that line similar in every respect to the other corrugations. The balls are then laid away for a week or two to age according to the demand, of course longer the better. They are then washed in a solvent that they should be free from dust, after which they are painted, usually white with elastic coating. The first coat being very thin, the second medium, and the third and last coat quite thick. They are rubbed in the palm of the hands that all the corrugations be filled. The ball after painting is thoroughly dried and is then finished. In packing they are wrapped in square pieces of tissue paper placed in a telescope box that holds just one dozen.

When one comes to consider the 35% duty on these balls and the Gutta-percha costing the same here as in London free from all duty, this shows a very good margin of profits, the labor on a dozen balls costing but ten cents, complete. Comparing the cost of labor in this country with that of England and considering the heavy duty on the balls they can be made in this country with better advantage. In addition to this the concern that is in this business is also equipped for the remaking of old golf balls. They are usually received by weight preferably than by number, as a good many old balls are nicked and are undersize. They are put in a weak solution of lye and well stirred to remove the old paint and then softened in hot water and placed in the scarifier and cored in the same way as making a new ball. They are then sold as "remades." They are considered by professional players on account of their extreme age to be 25% better than the new balls.

It requires to manufacture golf balls the special machinery adapted for this special work, as the intense heat gained by rubber machinery deprives the ball of its life, as Gutta-percha should be kept as cool as possible in working. W. T. D.

Bridgeport, Conn., August 6, 1898.

RANDOM NOTES FROM PARÁ.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Gustavo Brendel and Celso Palim, German engineers, with a staff of eleven persons, have arrived at Pará by the river Tapajós, from Cuyabá, having spent three months in surveys and explorations. They report the existence of large rubber forests along the river Arinos, the upper Jurucua, and on the Tapajós as far up as the mouth of the São Miguel. Their work consisted in part in tracing the outlines of these forests. The party were attacked by the Tapauhuma savages, on the upper Arinos, several of whom they killed in defending themselves. It is thought probable that the old navigation route between Diamantino and Itaituba, via the Tapajós, will be resumed, in which event the rubber in the district mentioned will become available.

Two new steamers anchored at Pará on October 8. They were the *Cearense*, consigned to Alberto da Costa, and the *Arica*, consigned to P. Mouraille & Brother, and both destined for the rubber-carrying trade on the Amazon.

The government at Rio de Janeiro has granted a patent (No. 2621) to Senhor R. M. Carepa for a new style of tin cup for use in collecting rubber-sap, the whole being stamped out of a single piece of metal. It is claimed in Pará that the invention was first brought out in England by a Mr. Greaves.

A leading banking house in Rio de Janeiro has subscribed to an important extent to the capital of a company for cultivating the "mangabeira" rubber in the state of São Paulo. The company are reported to have 4,000,000 milreis in hand.

An interesting article in *A Província do Pará* on the river Negro—an immense affluent of the Amazon on which Manáos is situated—reports a great wealth of rubber forests along portions of it.

Dr. H. Meyer, who visited some of the unexplored regions of the Xingu river in 1884, will undertake soon an expedition to the rivers emptying into the Xingu north of Culene—a region never yet visited by white men, but believed to abound in rubber.

Dr. Gentil Bittencourt, a brother-in-law of the broker, Mr. Fred Pond, has been reappointed vice governor of the state of Pará.

Mr. Joseph Bach, an Amazonian traveler, announces what I have heard before, that certain Indian tribes have understood the use of the telephone—in a primitive form—from time immemorial, using Caoutchouc in its construction.

The newspapers of Pernambuco announce the discovery in that state of rubber trees, in large numbers, of a species hitherto unknown. The native designation is the "penon" tree. In the *Diário de Pernambuco*, Dr. Leon Duclos, director of the Pernambuco Laboratory of Hygiene, writing under the date of September, states that this new rubber product is whitish in color, and soft and elastic at the ordinary temperature. At 140° F. it is viscous and adheres to hard, dry bodies; at 180° to 200° it melts into a thick, oily liquid. The specific gravity is 0.978, at a temperature of 25°. Dr. Duclos concludes by saying that it is a rubber of good quality, and suited to use in manufacturing.

Dr. J. Huber, the curator of the Pará museum, writes in the *Diário Oficial* of Pará suggesting the desirability of making a good selection of seed in planting the Ceará rubber tree beyond its native habitat. He thinks that this species, rather than the *Hevea* species, lends itself to improvement through selection, on account of the fact that it begins to produce seeds at such an early age—from three years in fact. It is very probable, he says, that by always selecting the seeds of the most healthful

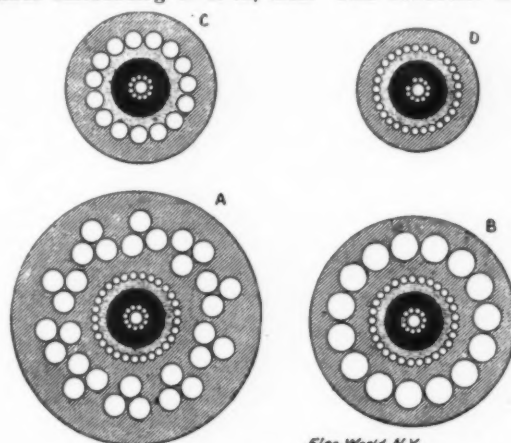
trees, and those producing the richest yields of latex, one could in a few decades, create a new species, not alone suited to a new climate or soil, but also affording a larger return of merchantable rubber than now. Dr. Huber remarks further: "Unfortunately, botanical knowledge with us is in its rudimentary state, concerning the physical conditions best adapted to the production of the precious milk in rubber plants." It seems that even in those parts of Ceará where the "manicoba" rubber is indigenous, the trees do not always yield the latex at a profitable rate.

GRAO PARA.

Pará, Brazil, October 21, 1898.

THE GUTTA-PERCHA IN A NEW CABLE.

THE cable recently laid direct from Brest, on the coast of France, to New York city, by the Cie. Française des Câbles Télégraphiques, according to *La Nature*, has a length of 3540 miles and weighs in excess of 10,000 short tons. The conducting core is made up of a thirteen wire copper cable, the central conductor having a diameter of .12 inch and the twelve strands surrounding it of .04 inch. This conductor is sur-



Elec. World, N.Y.

CROSS SECTIONS OF FRENCH CABLE, ACTUAL SIZE.

A—shore ends, doubly protected; B—coast type; C—intermediate type; D—deep sea type.

rounded by the Gutta-percha dielectric, the thickness of which is .14 inch, the weight of this material being about 396 pounds per nautical mile. The total weight of Gutta-percha used is 1,232,000 pounds. The dimensions of the copper and Gutta-percha used are uniform throughout the length of the cable, but the protecting envelope varies largely in diameter according to the location. The lightest section is that used for the deep sea service, while the shore ends are the largest of all. The cable was built and laid by the Société Industrielle des Téléphones, manufacturers of all descriptions of electrical apparatus and supplies, who have a submarine cable factory in Calais.

RUBBER FOR PATTERN-MAKING.—An ingenious Frenchman has turned the expansive property of rubber tubing to good purpose by using it when inflated with air as a pattern for the formation of pipes in cement and sand. To make a continuous conduit in the ground, a trench is dug, and at the bottom of this is laid some cement mortar. The rubber tube, already inflated, is now laid down and is surrounded with cement mortar of sufficient thickness. When this is set, the rubber pipe is deflated and its diameter being thus reduced it is easily withdrawn, reinflated to the size required, and used again. Cement pipes are said to have been made by this process more cheaply than by any other.

GOOD RUBBER PUMP VALVES.

THERE is hardly a better illustration of the improvement which has been made in the quality of mechanical rubber goods in recent years than is afforded in the case of pump



valves. Such a great variety exists in pumps, and pumps are used under such a diversity of conditions, as to call for an endless list of different valves, in order that the requirements of every case may be met. There are demands for pumps for use in connection with hot water, cold water, salt water, acids, and oils; under great pressures and low

pressures; under high and low temperatures, and so on, besides which is to be considered the wide range in shape and size of the pumps for which valves are required. And yet the rubber manufacturer has been able to meet satisfactorily every demand from every source, furnishing valves not only suited for present service, but proving their merit additionally by reason of durability. It is only necessary nowadays for the intending buyer of valves to state clearly the conditions under which the valves are to be used, together with proper measurements of dimensions, in order to be assured of getting from a first class rubber concern an article which will fulfill every requirement. In this connection mention may be made of a house which has given special attention to the production of rubber pump valves, and with satisfactory results—the Boston Belting Co., so long prominent as manufacturers of mechanical rubber goods.

AMERICAN DRESS SHIELDS ABROAD.

THE trade in dress-shields in Europe, according to the *India-Rubber Trades Journal* (London) "seems to have been introduced by and kept chiefly in the hands of Frenchmen. . . . Not that the manufacture has been confined to France, because, speaking of about ten years ago, the cut-sheet from which they were made came from our well-known English firms, and not only the rubber sheet but the finished goods were at one time largely made by at least one English firm, and sent to Paris to reappear as Parisian goods." The trade was not altogether satisfactory, however, owing to difficulties in the way of vulcanizing the goods.

"Of recent years," continues our contemporary, "the Americans have introduced into the country a shield consisting of a thin film of spread sheet, steam vulcanized, and in the form of a double texture of cotton fabric. These are much lighter than the pure rubber and have the advantage of giving off no odor, and we understand that their use has become very general. We were told that they were not rubber, but mindful of the mystery attaching to double textures in the minds of many people, we doubted this, and, as we expected, found by dissection that the rubber was there right enough, though only in a thin film. It is not only for ball-dresses that these shields are now being used; their applicability for general use has been demonstrated, and they now come into requisition very largely, not only for ladies' dresses, but also for men's dress-suits and for officers' uniforms."

The *Journal* suggests that the extensive sale of American dress shields in England indicate that the rubber-men in that country were not wholly awake to the opportunities which offer for the development of their own trade.

USES OF RUBBER TREE SEEDS.

FROM the Ceylon nursery firm of J. P. William & Brothers, at Henaratgoda, have been received their "New Product Circulars," No. 30, devoted to *Hevea Brasiliensis* (Pará rubber), and No. 31, on *Manihot Glaziovii* (Ceará rubber). The former says: "We have manured our Pará rubber trees, over twenty years old, last year, with goat manure, and the crop of seeds increased more than double the quantity this year. The trees are planted on the border of a river in sandy soil, and the place is inundated several times in the year. We have distilled good lamp oil from the seed kernels, similar to cocoanut oil. It burns well and gives a good light. The leaves are used as fodder for cattle, goats, pigs, etc., and seed kernels for poultry." They state that there is a very heavy demand for Pará rubber seeds and plants from all parts of the world. An order is mentioned for 30,000 plants from a single firm, amounting to £510 (= \$2550).

The other circular says: "The leaves of Ceará rubber trees are eaten by cattle, sheep, etc. This is another advantage of the tree for dry climates, where grass is scarce. The cuttings of the tree are used for fencing purposes by natives of Ceylon. Oil might be distilled from the seed kernels."

POOR TIRES EXPORTED.

A CONSULAR report from Copenhagen says: "Danish importers contracted in December last for enormous quantities of American bicycles, and the goods ordered are now coming. They are mostly of the lower grades, and therefore cheap. The bicycles themselves look very smart, and are no doubt good. Nobody complains about them, and the importers who have been wise enough to buy without the American tires are doing well; but the others repeatedly lodge complaints at this consulate about the miserable quality of the tires, which, while they look well, will not hold the air and necessitate constant repairs. If American tire-manufacturers do not immediately remedy the evil, which I know to exist from personal experience, as I am often called upon to examine the articles, I fear this important bicycle market will be lost."

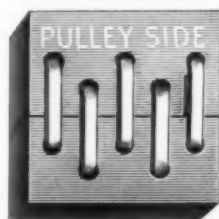
RUBBER BAND A REMEDY FOR HEADACHE.

A N effective remedy for headaches, according to a Washington physician, is to put a rubber band around the head just above the ears. "The band," he says, "should not be tight enough to stop the circulation of the blood. The band known as the string band is generally sufficiently heavy for the purpose. It should be applied just as soon as it is noticed that the headache is setting in, and taken off the moment the pain ceases. In many cases the rubber band works nicely, though it affords no relief when the headache is the result of stomach troubles or biliousness. I find, also, that a rubber band twisted about a toe between the corn and the foot is a handy remedy to stop the pain from a jumping corn. Corns are very liable to be troublesome when there is much humidity in the atmosphere. The rubber band seems to temporarily quiet the nerves in the toe, and in this way stop the pain. As in the case of a band around the head, the pressure should not be tight enough to stop the circulation of the blood."

NEW GOODS AND SPECIALTIES.

MALIN'S METALLIC BELT LACING.

THE advantage claimed for the use of this flat metallic belt lacing is that the waste is avoided which is liable to occur when leather lacing is used, enough of the metallic lacing being cut off to lace the belt, and no more. The joint is hardly thicker than any other part of the belt, so that there is no strain on belt or shafting when the joint goes over the pulley, thus saving wear on both belting and machinery. Hence, it is



claimed, the metallic lacing is stronger than any other, the joint lasting as long as the belt. The lacing is so made as to pull through the lace holes readily, and its strength is greater than the strain on the belt when transmitting the maximum of power. The lacing is wound in 50-foot lengths, on a hubbed wheel mounted in a wooden box and can be pulled out like a tape line, thus obviating danger of kinking or tangling. Manufactured by The Malin & Co., Cleveland, Ohio.

THE "ACME" STORM FRONT.

THE object of this "storm front" is to close the space between the upper margin of the ordinary dash apron and the top of the vehicle. It is made of rubber duck, with an elastic vertical section 5 inches wide, the object of the elastic being to maintain a uniform, smooth surface over the "storm front,"



and to prevent the tearing of the curtain by the swaying of the vehicle, as well as to facilitate its quick detachment. The ends of the "storm front" are placed between two steel plates, each having a curved end, and secured by six small bolts. On the outer plate is a tongue, and a rubber lined clamp, to be fastened on the bow with a thumb-screw, holds in place a receptable (or slot) into

which the tongue is inserted and is held by a spring pin attached to an automatic spring on the side of the slot. This front can be used with any ordinary dash apron, and is itself no part of an apron. Its weight depends materially on the size and weight of the glass, of which one or two may be used. It has been patented and is manufactured by Farrow & Allen, Beaver Meadows, Pa.

GREEN'S EMERGENCY PUNCTURE CLAMP.

THIS device is intended for temporary repairs in case of a puncture. If clamped about a tire so as to cover the puncture,

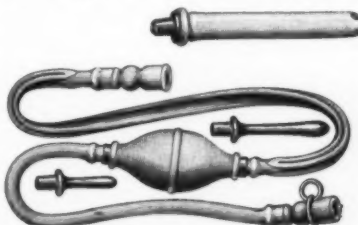
its purpose is to prevent any escape of air. A further use for it occurs in case of a tire becoming loose on the rim, when the clamp will hold it from creeping and prevent its coming off. The appliance is made of a spring steel band lined with India rubber, which is riveted on at the ends, and the clamping part is amply strong for its purpose. A patent has been applied for, and these clamps are said to have found much favor in bicycle clubs and with other wheelmen. The retail price is 25 cents, with a liberal discount to agents. Manufactured by W. W. Green, No. 43 South Clinton street, Chicago.



A NEW "ALPHA" SYRINGE.

THE illustration here shown relates to a newly patented article, listed as the "Alpha" ladies' special syringe, and offered as an improvement on the "Alpha E" syringe, long made by the same house. Instead of having all hard rubber pipes, as in the older type, the improved "Alpha" syringe has a vaginal pipe

made very flexible and with a polished surface. It is constructed, in fact, of the same material and having the same glossy finish as the "Alpha" catheters. The consistency of the compound from which these pipes are made is such as to give them both rigidity and flexibility—a characteristic for which the trade as well as the medical profession long have sought. This whole series is of the continuous flow type. Each syringe is packed in a handsome compact cloth case, with nickel plated clasp, and the name "Alpha" embossed on the top. Manufactured by Parker, Stearns & Sutton, Nos. 227-229 South street, New York.



"BUCKEYE" DOUBLE TUBE TIRE.

THE B. F. Goodrich Co. (Akron, Ohio) are licensees for the manufacture of the "Buckeye" tires, the form of construction of which is indicated in the accompanying illustration. This is a double tube tire which the manufacturers recommend particularly for sulky use, where it is understood to have proved entirely satisfactory. Though used on a rim which has not been channeled, as in the case of other double tube tires, the "Buckeye" does not require to be cemented on. The toothed washers, which are held to the rim by the spoke nipples, hold the tire to the rim and prevent



creeping. The "Buckeye" tire will fit regular crescent or dished rims.

A HANDSOME TOILET CASE.

THE illustration shown herewith fails to do justice to a handsome article designed primarily for the convenience of travelers, in the shape of a toilet case. Three features which commend it are (1) its helpfulness in keeping together such articles as a comb, brush, scissors, soap, and the like; (2) that it is water-



proof; and (3) its ornamental appearance. They are made either with silk or sateen backing, of convenient size. While on a journey, the case is rolled up, and tied with a ribbon. When spread out, it is seen to be provided with pockets conveniently arranged for the different articles which it is designed to hold. Manufactured by the Hodgman Rubber Co., New York.

THE "NEARKID" RUBBER GLOVE.

IN the art of rubber glove making a valuable improvement has been made by which the clumsy and stiff feeling so often experienced heretofore is now changed to many of the advantages obtained in a kid glove. The "Nearkid" has the fabric



lining so employed that its line of greatest elasticity is lengthwise with the fingers of the glove, thus permitting of the free opening and closing of the hand and fingers. Manufactured solely by The Seamless Rubber Co., New Haven, Conn.

COMBINATION SPORTING SHOES.

SCAFÉ'S patent English India-rubber and leather combination shoes and heels are made for every class of wear for men and women, but particularly for golfing and other sports. While the advantages of rubber soles are conceded by all hands, there are people to whom a sole made of India-rubber alone brings unpleasant results, the prevention of which is the object of the introduction of leather and rubber combined in the soles and heels of shoes. This invention is covered by patents in the United States as well as abroad, and the trade is supplied by the



American agents, J. K. Krieg & Co., shoe manufacturers, No. 39 Warren street, New York.

SELF-ADJUSTING CARRIAGE TIRES.

THESE tires differ from others in the method of attaching them to the wheels. The tires are shipped in annular or circu-

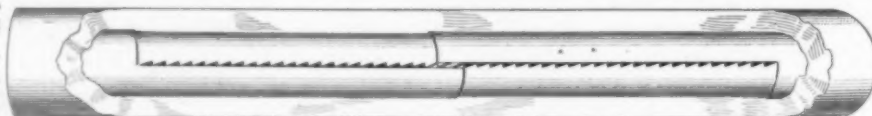


FIG. 1. POSITION OF LOCK BEFORE TIRE IS APPLIED.



FIG. 2. POSITION OF LOCK WHEN TIRE IS CONTRACTED.

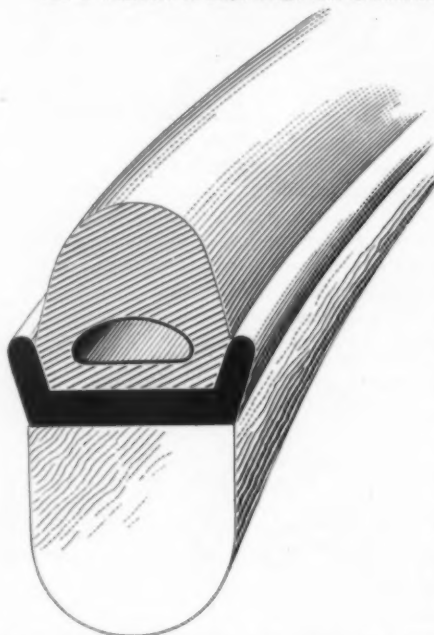


FIG. 3. POSITION OF THE TIRE IN CHANNEL-IRON RIM OF THE WHEEL.

lar form, being larger in circumference than the wheels for which they are intended. The core of the tires is of fine steel tubing, from the ends of which project two toothed jaws. These jaws are interlocking, making the tire capable of contraction but incapable of expansion. Fig. 1 shows the position of the lock when the tire is shipped from the factory, ready to be put on the wheels, only the first tooth being engaged. Figure 2 illustrates the position of the lock when the tire is contracted, all the teeth in the lock being engaged. Figure 3 shows the position of the tire when in the channel iron rim of the wheel. The rubber at the base of the tire is held under tension between the flat side of the tubing and the channel iron, making it impossible for the tire to creep around the wheel and cause chafing. The tubing is broad and well rounded, in order to offer no cutting surface to the rubber. The tire grips the wheel tightly, causing it to maintain always the same position in relation to the wheel. These tires have been in experimental use for three years and have been patented in the United States, Canada, and Great Britain. Manufactured for the Rubber Carriage Tire Corporation, No. 1 Madison avenue, New York.

THE factory of the Empire State Rubber Co., at Setauket, reported last month to have been destroyed by fire, was insured to the extent of \$25,000.

ENLARGED FACTORY OF THE JOSEPH STOKES RUBBER CO.

THE plant of the Joseph Stokes Rubber Co. (Trenton, N. J.) has been largely extended of late, involving the erection of a large new structure which becomes their main factory building, and also a building for use in reclaiming rubber. The main building has been designed with a view to every need of a first-class rubber factory, in the mechanical goods lines, besides which its construction has been modeled on the best approved practice. An accompanying illustration gives a bird's-eye view of the whole plant as enlarged.

The main building, fronting on Taylor street, is constructed of brick and is 128 x 60 feet, three stories high, with walls 18 inches thick, and well lighted on every side. The first floor has been designed mainly for use in the manufacture of carriage cloths, for which a room 60 x 110 feet has been fitted up, with cemented floor and a height of ceiling of 18 feet. The equipment for this department is of a modern and complete type. On the same floor are the general business office, and a room devoted to the

with a capacity of 10,000 gallons, and other arrangements exist for a complete fire protection system.

Building No. 2, which is connected with the main building by an entrance 12 feet wide, consists of a single room 75 x 75 feet in size, devoted to the manufacture of tires, molded mats, and molded goods generally. This room is lighted with windows and skylights, and contains ten five deck steam tire presses, cutting tables, inspection tables, etc.

Building No. 3, adjoining the above, in addition to the engine room, is about 80 x 100 feet. It contains the rubber grinders, mixing rolls, calenders, and belting press, supplied by the Farrel Foundry and Machine Co. The engine room is equipped with a 250 horse-power Corliss engine and five large boilers.

Building No. 4, adjoining the one last mentioned, is about 40 x 80 feet in size, in connection with which are some smaller structures, devoted to machinery and materials for the manu-

facture of reclaimed rubber, and also compounding rooms, etc. For reclaiming rubber there are three vulcanizers, with a capacity of seven tons each.

In addition to all these, the plant includes store-houses and sheds and stables. The working departments are heated by steam pipes and lighted at night by electricity. For convenience in shipping goods, a railway switch is to be extended to the factory. There will be capacity in the works as they now stand, for the employment of 350 to 400 hands. The manufacture of cotton hose has been actively begun in the new building, and the making of tires will follow speedily. The

company also make a specialty of belting and packing.

PERCHOID IN INDIA.

THE Indian government has adopted for army tents, a double texture, made of two sheets of thin cotton cloth, between which is spread a coating of "Perchoid" or "Oxilin." A sample that reaches us from the foreign office is rather disappointing, but in use it may develop qualities that are superior to rubber. There is no doubt but what it is waterproof, but the cloth peels very easily from the gum, and the gum, even when thinly spread, seems to be very heavy and has a sweet sickish smell that is enough to turn the stomach of any except a native soldier. The gum for this use seems to have been compounded with a green pigment. It is probable that its chief recommendation to the board was its ability to resist climatic changes, as India-rubber, unless very carefully prepared for the tropics, soon perishes,



ENLARGED FACTORY OF THE JOSEPH STOKES RUBBER CO.

offices of the general manager and the superintendent, all finished in hard wood and handsomely furnished. The shipping department is also accommodated on this floor. A stairway extends to the upper part of the building, which may be reached also by a Morse elevator.

The second and third floors are devoted to the manufacture of cotton hose and mechanical rubber goods. For cotton hose there are a complete outfit of twisting, beaming, and bobbin winding machines and also ten new circular looms, constructed expressly for this company; machinery for finishing hose; new tubing machines; and vulcanizers for semi curing inner tubes. The hose weaving is done on the third floor—which is provided with large sky lights in addition to a liberal supply of windows—and the product is conveyed to the finishing floor below, coiled in wooden boxes, through a series of chutes, the system being designed with a view to cleanliness of the hose at every stage of the manufacture.

Attached to this building is the tower fire tank, 100 feet high,

CANADA TAKES MORE RUBBER.

THE Canadian statistics of imports for the fiscal year ended June 30, 1898, show the following details affecting the rubber industry in the Dominion:

CLASSIFICATION.	Pounds.	Value.
"Gutta-percha".....	9,440	\$ 2,450
"Rubber, crude caoutchouc, or India-rubber, unmanufactured,".....	2,447,881	1,584,914
"Rubber, recovered, and rubber substitute, and hard rubber in sheets,".....	1,316,494	138,292
"Rubber powdered and rubber waste,".....	102,470	6,089
Total.....	3,876,385	\$1,731,745

The total is larger than in any previous year. In the following comparative table for five years past the figures refer to pounds:

YEARS.	India-rubber and Gutta-percha.	Recovered Rubber and Substitute.	Total.
In 1893-94.....	2,077,703	529,900	2,607,603
In 1894-95.....	1,402,844	611,745	2,014,589
In 1895-96.....	2,155,576	643,169	2,798,745
In 1896-97.....	2,014,896	1,061,402	3,076,298
In 1897-98.....	2,457,331	1,316,494	3,773,815
Total, five years.....	10,108,340	4,162,710	14,271,050
Percentages.....	70.8	29.2	100

The importation of manufactures of India-rubber and Gutta-percha reached \$407,117—the largest figure since 1894-95, when the total was \$420,346.

THE RUBBER INTEREST IN AFRICA.

IN regard to India-rubber, the annual report on the Gold Coast Colony—which yields the Accra grades—says: "It is hoped that native collectors of rubber have at length realized that the only economical method of drawing off the sap from the tree is to tap it, and that to fell the tree is most wasteful and destructive. Those who travel in the forests can now see the trees scored with vertical and lateral incisions. Without the coöperation of the natives, effective government supervision for the protection of rubber-trees is impossible, and forest laws would therefore be a dead letter."

THE output of rubber from Angola, the Portuguese possessions south of the Congo, has been well sustained, as indicated by the following returns of exports (in pounds), for several years, including the latest for which official figures are at hand:

DISTRICTS.	1898.	1897.	1895.	1896.
St. Paul de Loando.....	623,469	1,376,910	1,629,278	1,582,772
Benguella.....	3,313,956	2,663,729	2,970,785	3,380,428
Mossamedes.....	1,239	66	28,028	58,113
Ambriz.....	25,417	42,359	4,607	5,678
Total.....	3,967,081	4,083,064	4,632,698	5,025,991

THE exports of crude rubber from the Portuguese colony of Beira, in east Africa, for 1897, according to a British consular report, amounted to 9 tons and 17 hundredweight (= 22,064 pounds) or 25 long tons less than in 1896.

OVER FIFTY YEARS.—Age, in nineteen cases out of twenty, in a business enterprise, particularly in a manufacturing concern, is a guarantee of merit. If a manufacturing business has been established and running successfully for fifty years, you are bound to feel a confidence in the quality of its product. There is every reason that you should. The Candee, Wales-Goodyear, and Meyer rubber companies have all been in successful operation for over fifty years.

THE WOONSOCKET BODY BOOTS.

THE Woonsocket Rubber Co. are the only manufacturers of "body boots." They are in great demand among oystermen and fishermen—not fishermen for sport, but fishermen for business. They resemble in their construction a pair of hip boots, only that the tops are brought way up nearly to the shoulders, and, of course, the two legs are joined together, making, as a matter of fact, a pair of rubber trousers with boots on the ends. In fact, in the catalogues of the Woonsocket company of eight or ten years back they are described as "Wading Pants, or Body Boots." The boot top is held in place by straps over the shoulders, though some (a little shorter) are made with a belt to go around the waist. The wearer of body boots can stand in water almost to his shoulders with impunity, and while, of course, there is a limited demand for them, those who want them want them badly, and are only too glad to pay the catalogue price of \$10 a pair. It might be added that there is another advantage to body boots not enjoyed by any other variety, namely—that you can never lose one of them—for when you have one you always know where you can find the other. Baltimore is said to be the greatest distributing point for these boots.

THE McCULLUM SUBSTITUTE FOR RUBBER.

AN alleged new rubber substitute invented by David McCullum has been the subject of several newspaper articles of late, all of them relating to its great merits but none giving evidence of its having been tested. The following statement comes from a member of a company by whom this latest inventor in a well-worked field was at one time employed:

"McCullum, like all other ignorant persons, imagines—because of his association with us as salesman for one month in the early part of last year, and through a slight knowledge obtained from a discharged workman—that heating a combination of oil and sulphur together would make a substance resembling rubber in appearance, but not elasticity. With such ideas McCullum was carried away by his imagination of untold wealth and could not keep the supposed secret to himself, but interviewed the reporter of the Associated Press, who was impressed by McCullum's eloquence and sincerity. There is no foundation in fact for the McCullum process."

JAPANESE TARIFF.—The new Japanese tariffs, to come into force on January 1 next, will apply to American, English, German, French, and Austrian goods. By the tariff now expiring, a maximum of 5 per cent. *ad valorem* was fixed, but the rate has been increased with regard to a good many articles. The rate on India-rubber manufactures is to be 10 per cent.

GERMANS TO PLANT RUBBER.—The Santa Ines Huatalco estate, in the Jaquila district of Oaxaca, Mexico, near the large La Esmeralda rubber estate, has been purchased by a German syndicate who propose, it is reported, to utilize the land for the cultivation of rubber on a large scale. The transfer was effected by G. Stein, who long has been engaged in business in Oaxaca.

NEW SOUTH WALES.—The minister of agriculture of this colony wrote recently to Kew for seeds of India-rubber of varieties suited for cultivation there. In reply, the director of Kew stated that the only tree likely to suit the climate of New South Wales is the *Ficus elastica*, which produces the Assam rubber. The *Ficus elastica* could be easily produced from cuttings, but no commercial success has yet attended its artificial cultivation for the purpose of rubber production.

A FEW NOTES FROM ENGLAND.

THE shareholders of the Warrington Rubber Works, Limited (Warrington, England), on October 17 resolved to wind up the business and offer the works for sale, and Ellis Vinson Cooke was appointed liquidator for the purpose of carrying the resolution into effect. The history of this company is outlined in THE INDIA RUBBER WORLD of March 10, 1898 [page 170]. They never were successful, and not least among their troubles was their experience with the Dean tire, an American invention in which they invested heavily.

* * *

THE factory operated for three years past by Symington, Bussweiler & Co., in Liverpool, for slicing, washing, and pressing African rubbers, was closed recently for an indefinite period in consequence of proceedings at the Dale street police court taken by the health authorities, on the allegation of citizens that the work gave rise to such offensive smells as to create a nuisance. The *India Rubber Journal* notes that similar works exist in other localities in Liverpool without giving rise to complaint; besides, the works proceeded against were in a locality notorious for "odoriferous businesses."

* * *

DR. DANIEL MORRIS, C. M. G., of the Kew gardens, whose lectures on the "Sources of Commercial India-Rubber" were reviewed in the last INDIA RUBBER WORLD, has been selected by the British government to initiate the formation of a botanical department for the lesser British West Indian islands, the Jamaica, Demerara, and Trinidad departments to remain as at present under their several managements. Dr. Morris's head office will be located at Barbados. No doubt he will be heard from in the near future in connection with experiments in rubber-culture.

HE SHOULD SEE AMERICAN RUBBER BELTING.

AN English expert who writes for the *Engineer* (London), thus condemns rubber belting:

Substitutes for leather belting are numerous, and have been tried in nearly all possible combinations of India-rubber, Gutta-percha, hemp, flax, cotton, hair, etc. Some do not stretch, others are unaffected by heat, many withstand moisture, cold, gas, etc., and for all nearly every requirement of a good belt is generally claimed. India-rubber, Gutta-percha, and their various combinations suffer soon by blistering, scaling, wearing, etc., and all the others being in some way produced, woven, plaited, knitted, or otherwise, from threads, when only one of these threads or meshes breaks on the edge of the belt, a further unravelling soon takes place, the weak places enlarge, effectual repairs are impracticable, and such belt is soon a thing of the past. These substitutes for leather belting have all one and the same shallow advantage, viz., their purchase price is less than leather, but in reality they are far more costly in comparison to the real worth and service. Their costly, short, and troublesome service is also no surprise to any one, as "we are used to it."

RUBBERS THAT FIT.—Now that the rubber season has fairly arrived, there is one point that the retailer should always keep in mind—that is, the matter of fit. Don't let any customer go out of your store in misfit rubbers. Don't let your clerks put narrow-toed, narrow-heeled rubbers on a broad-soled, wide-heeled shoe. No rubber will wear unless it fits. Not even the finest "Candee" or the best "Wales-Goodyear" will wear satisfactorily if it is stretched out of shape.

PATRIOTISM AND GOLF.

AN importer in Boston said to a *Transcript* reporter, regarding the comparatively small demand in this country for Gutta-percha, that a practical display of that patriotic impulse which is so much in evidence everywhere would, if directed to the purchase of American-made goods, give our Gutta-percha manufacturers a much more profitable business than they now enjoy. In the matter of golf balls, for instance, we are making, he claimed, just as good an article here as is made anywhere in the world; "but," he said, "it seems that the trade-mark of a foreign maker is necessary for their acceptance by players of every class."

When this statement was shown to an enthusiastic golfer, who likewise is an American citizen whose patriotism is undoubted, he said to an INDIA RUBBER WORLD man:

"So far as I am concerned, I should much prefer to buy American made golf balls, quality and price being the same, but thus far I have confined my purchases to imported balls. There are many golf balls made in this country, but they find a sale mainly among new players, and those who have not learned to discriminate in the matter of quality. The specifications of a model ball would be something like this, and whenever they are to be found in an American ball, it will meet a good sale:

"It must be of the standard size, whereas most of the balls made here are under-sized; it must be of the proper weight, which is regulated by the compression used in manufacture; it must not split easily; it must be of the right hardness, being neither so hard as to chip off readily, nor so soft as to 'nick'; it must hold the paint readily, which requires a certain quality in both the ball and the paint; it should have either fine running qualities or a good flight—slightly differing features not to be found in the same ball.

"I don't mean that all these excellencies are to be found in any one ball, even of the best foreign makes, but a ball to be acceptable to a good golfer must possess several of them, and up to date I am convinced that fewer of them are to be found in any American ball than in some of the popular imported brands."

OUR DRUGGISTS' SUNDRIES IN AFRICA.

THE United States consul at Cape Town, South Africa, wrote under date of October 12, 1898, through the department of state at Washington, to a manufacturer of druggists' sundries in New York:

"The white rubber goods manufactured in the United States will soon have the trade here, for it is said that no other foreign manufacturer has as yet been able to produce a quality which will stand the climatic conditions of South Africa; so that, with proper effort on the part of the producers of the United States, the demand will soon be increased. A representative from the United States who has just been through South Africa reports an increased trade and a growing demand."

THE French consul at Riga, Russia, has made a report on the rubber factory near that port, established in the summer of 1889 with French capital, amounting to nearly \$500,000. It is called the "Provodnik," and manufactures mechanical and surgical rubber goods, goloshes, and large quantities of lineoleum. In 1891 the production of goloshes reached 250,000 pairs; in 1894 it had grown to 2,000,000 pairs; and it was expected that the output for 1897 would exceed 3,500,000 pairs. Besides finding a sale throughout Russia, the "Provodnik" goods are exported largely, and particularly in the far east.

HEARD AND SEEN IN THE TRADE.

"IT may be a matter of surprise to some people that there is any commodity under the sun the price of which is not constantly tending downward," said a dealer in rubber scrap. "But the fact is that in my line it is easier to get prices up than to get them down again. There are collectors of scrap all around, each holding for a higher price than the last, and it happens now and then that I have to pay an advance in order to get stock which I am obliged to have. The facts don't remain a secret very long, after which everybody with scrap to sell is trying to benefit by the advance."

"WHAT is the explanation of the recent great increase in the importation of rubber scrap?" the same gentleman was asked. "It means," said he, "that a lot of people who have been going along with their eyes shut are getting them open. They are beginning to see that, for certain purposes, scrap which wouldn't be accepted a little while ago gives good service. Besides, the high prices prevailing in the domestic trade has made an opening for the lower priced stock to be had abroad."

"THERE is every prospect of coarse Pará rubber keeping up in price," said a tire manufacturer. "Last year a lot of manufacturers used African grades in tires, with the result that the demand for coarse Pará seemed likely to become less pressing. But the Africans didn't stand the test of wear, and now some of those manufacturers wish they had stuck to Pará rubber. And there was enough African rubber used by people in this class to make a difference in the cost of the other sort when the tire people come to filling their requirements for this season."

"IT won't do to speculate on the price of crude rubber on the basis of current supplies as compared with those of former years," said a manufacturer. "What is of equal importance is to consider the degree of activity among the manufacturers. Just now the factories are unusually busy, with a general condition of business which seems to point to more work for the rubber men before they have less to do. The bearing upon prices is, that it is not safe to count on their going down to the figures of some former year when stocks may have been the same as now, but when the industry was depressed and the factories running on short time."

MR. C. V. TUTHILL, manager of the New York office of the Western Wheel Works (Chicago), whose standard equipment includes the detachable tire, expresses the opinion that the single tube tire reached its height of popularity three years ago, since which time the detachable type has been gaining in favor. Besides the claim usually made by advocates of the detachable tire, that the other sort is hard to keep in repair, Mr. Tuthill thinks the single tube tire is being forced out of the market by the product of concerns not properly equipped for tire-making in the first place, and not always aiming to make tires of good quality, in the second place. I asked for his explanation of the fact that, whereas nearly every rubber concern exhibiting tires at the earliest cycle shows included both kinds in their displays, most of the concerns now confine their production to single tubes. That, he said, was because it was found to be harder to make good double tube or inner tube tires than to make a "hose pipe," and that the production of the former gradually became confined to large factories equipped for good work and

also to make good their guarantees. Besides, some of the best features in double-tube tires are protected by patents, which serves to limit the number of manufacturers, but the concerns that are producing this type are, according to Mr. Tuthill, kept busy filling orders.

MR. F. S. ASHLEY, who has charge in New York of the tire sales of the L. C. Chose & Co. (Boston), is an advocate of the sale of bicycles without tires, leaving the choice of price and quality of the tire to the cyclist. Nowadays the cycle manufacturer buys one grade of tires at a fixed price—the lowest which he can persuade the rubber-man to name—with the idea that the complete wheels will be sold at a uniform price. Mr. Ashley's view is that different cyclists would be willing to pay different prices for tires, according to quality, or on account of special features. The advantages which he claims for the method suggested are: (1) The manufacturer would be relieved of a certain amount of trouble through not having to handle tires, besides which none of his capital would be tied up in tires; (2) the rubber manufacturer, selling direct to the cyclist, or to the cycle dealer or agent, would get a better profit, since the tire business would not then have to stand the profit which the cycle maker now aims to make on every tire placed on his wheels; (3) the cycle agent, having a direct interest in the sale of tires, would exert himself to sell good ones rather than bad, which would result in benefits all around; and (4) the cyclist would be more apt than now to get good tires.

ONE tire firm could hardly introduce such an innovation on its own account. The gentleman named above suggests that it should come through an agreement among the bicycle makers to sell their wheels without tires.

A MEMBER of the tire trade expresses the opinion that 50 per cent. of the bicycles sold next season will bring \$35 or less; consequently low priced tires will continue in demand. Yet he thinks that even at \$35 a wheel might be furnished with good tires, so great has been the reduction in the cost of the various parts, and in view of the fact that a poorly made wheel with good tires affords better riding than the best possible wheel with heavy or unresilient tires.

I AM told that the larger share of the exports of rubber druggists' sundries from the United States is controlled by a New York firm in another line whose traveling salesmen and resident agents all over the world handle rubber goods as a side line. They thus have the advantage of machinery for distribution of goods which could hardly be maintained by any one house for rubber druggists' sundries alone.

THE crude rubber used by Pacific coast manufacturers is received mainly by sea. With respect to East Indian sorts, they have an advantage over importers in New York; Mexican and Central rubbers have a shorter distance to cover to reach San Francisco than any other rubber consuming port; while as for "Pará" rubber, the grade which is shipped from Bolivia, via Mollendo, on the Pacific coast, is about as good as any rubber that grows. It is claimed that the reclaimed rubber made on the Pacific coast is of an excellent grade.

THE MAN ABOUT TOWN.

TRADE AND PERSONAL NOTES.

THE resignation of George A. Lewis as president of the Goodyear's Metallic Rubber Shoe Co. has been followed by the election of Colonel Samuel P. Colt to fill that position. The report that Mr. Lewis is to be connected with the new rubber shoe concern organized at Beacon Falls, Conn., is now confirmed. The new company will be known as the Harris Rubber Co., and their equipment of machinery will be furnished by the Farrel Foundry and Machine Co. (Ansonia, Conn.). A sufficient capacity is talked of to allow of the employment of 300 hands.

=Mr. Joseph A. Minott, secretary of the Goodyear Rubber Co. (New York), was recently on his semi-annual tour of inspection of the company's branch houses in the west.

=The Rubber Carriage Tire Corporation, incorporated recently in New Jersey, have opened offices at No. 1 Madison avenue, New York. Edgar Park is president and Arthur C. Schiller treasurer.

=The Joseph Dixon Crucible Co. (Jersey City, N. J.) have added to their pencil factory a three-story building 40x90 feet. Though established so long ago as 1827, the company report that no year in their history has in any way equaled 1898 for volume of business.

=The Peerless Rubber Manufacturing Co. have a fire brigade organized from employes of their factories at New Durham, N. J., which is drilled every week. Five men and a captain are detailed to each of the twelve hydrants on the premises. Each hydrant is provided with 100 feet of hose, and a stream of water can be thrown on any of the buildings.

=The National Tire Co. (Chicago), incorporated early in the year to exploit a peculiarly corrugated single tube tire patented by George W. Dorr—who is the company's president—have obtained permission under the Illinois laws to increase their capital from \$20,000 to \$50,000.

=E. E. Buckleton, of the Joseph Stokes Rubber Co., is visiting the trade in the far west, being in San Francisco when last heard from.

=An auction sale of about 18,000 cases of rubber boots and shoes was held on November 29, by Johnson, Moody & Co., Boston, on account of the Boston Rubber Shoe Co., including "seconds" or imperfect goods, and also perfect goods out of style.

=A handsome and timely "Garden Hose" catalogue has just been issued by the Manhattan Rubber Manufacturing Co. (New York.)

=Edward R. Rice, who represents the Banigan shoe interests at Buffalo, N. Y., was drafted for jury duty during the last month, his salesmen meanwhile sending in good orders.

=Willard G. McConnell, formerly connected with the Buffalo Rubber Co.'s retail store, has a good position in the retail department of the Buffalo Mill Supply Co.

=Whittet, Barrett & Co., Buffalo, N. Y., have taken the agency in that section for the New York Belting and Packing Co.

=The rumor has gone out that the L. C. Chase Co. (Boston) were to give up the manufacture of tires. This is not the case. They have however taken the position that they will not manufacture and sell tires in the way in which that business is done in the United States to-day. Just what departure from the prevalent methods they are planning or what they intend to do does not as yet transpire.

=The Monarch Rubber Co., rubber jobbers, of St. Louis, have increased their capital stock from \$50,000 to \$75,000. H. E. Wagoner has been re-elected president. The other offices have been filled by new men—W. P. Hazard as vice-president and E. H. Gorse secretary and treasurer. These positions were held before by George J. Kobusch and Louis Hofman, respectively, who have disposed of their interests in the company to their successors.

=The thirty-first annual auction sale of rubber boots and shoes of the Canadian Rubber Co., of Montreal, took place during the past month, when about 7000 cases of seconds brought in the neighborhood of \$75,000. Last year the total was \$60,000, prices averaging about the same. About 300 buyers were present.

=Edwin Elberson, secretary of the Empire State Rubber Co. (New York and Setauket, L. I.) has become interested also in the stock brokerage business of G. B. Salisbury, of No. 127 Duane street, a member of the New York Stock Exchange. The firm deal in specialties and have issued a circular commending United States Rubber to investors.

=The Indianapolis Rubber Co. (Indianapolis, Ind.) have obtained a permit for building a \$2000 addition to their factory.

=The Victor Rubber Tire Co. (Springfield, Ohio) have started their new factory at Victoria, of which Albert T. Holt is superintendent. The company have been incorporated, with \$100,000 capital.

=The Eastern Rubber Co. have been incorporated at Kittery, Me., to make and deal in rubber goods, with an authorized capital of \$50,000, of which none has been paid in. The officers are George M. McCollar, president, and Daniel C. McCollar, treasurer, both of Cambridge, Mass.

=The Modern Rubber Manufacturing Co. have been incorporated under the laws of New Jersey, to manufacture rubber goods, with \$100,000 capital, by Joseph H. Magowan, L. Cadwallader Dickinson, and John T. Magowan—all of New Jersey—and Edward M. Spear, No. 52 Wall street, New York.

=Frank A. Magowan was reported recently to be at Erie, Pa., "closing a deal" for the control of a rubber plant. At the same time a Trenton newspaper despatch reported: "He is receiving subscriptions to a new \$10,000,000 syndicate which will revolutionize the rubber business in this country. He expects to be able to incorporate this big concern by February 1."

=The little book entitled "How Rubbers are Made," issued some time ago by the American Rubber Co. as an advertisement of their goods, proved so interesting as a description of the industry that it has been reprinted in the reading columns of several foreign journals, including two or three in Germany and a leading French shoe paper.

=J. Wallace Franklin, on leaving the position of foreman of the packing room of the National India Rubber Co. to become assistant superintendent of the Byfield Rubber Co. (Bristol, R. I.), received a token of the esteem in which he was held by the employes of the former company in the shape of a fine gold watch and chain.

=The city of Chelsea, Mass., has acquired, for park purposes, 49 lots owned hitherto by the Boston Rubber Co. The consideration was \$6500.

=The Indiana Rubber and Insulated Wire Co. (Jonesboro, Ind.), on November 1 started their tire department with a full force, after a shutdown of a few weeks.

=As was expected, a new company have been formed to carry on the business of the Spaulding & Pepper Co. (Chicopee Falls, Mass.), tire manufacturers, who made an assignment on February 23 last, to Luther White. They have become incorporated under the laws of Massachusetts as the Fisk Rubber Co., with \$33,000 capital. The directors are Noyes W. Fisk (president), Harry G. Fisk (clerk and treasurer), A. N. Mayo, and C. E. W. Woodward (superintendent). The Spaulding & Pepper Co. were organized in 1895.

=A local newspaper says that the six rubber factories of Trenton, N. J., have \$1,050,000 invested, employ about 1200 hands, and produce nearly \$3,000,000 worth of goods in a year.

=The Goodyear's Metallic Rubber Shoe Co. (Naugatuck, Conn.) were reported recently to be at work on an order for 10,000 pairs of arctics for the United States army.

=Raymond B. Price, chemist formerly in the employment of the Boston Woven Hose and Rubber Co., has gone as superintendent to the Peoria Rubber and Manufacturing Co. (Peoria, Ill.).

=The Keystone Rubber Works (Erie, Pa.) were sold by the sheriff on October 31, to satisfy judgments amounting to \$25,000, in favor of Adelaide Richards, George D. Selden, and John H. Bliss. The purchaser was Frank Gunnison, counsel for the creditors, and the plant is to be continued in operation. Attachment proceedings were lately brought against the company by Morris & Co., manufacturers of cotton duck at Yardville, near Trenton, N. J.

=The La Crosse Rubber Mills Co. (La Crosse, Wis.) advise THE INDIA RUBBER WORLD that they are building an addition 50 x 80 feet to their stitching room, and expect to install sixty more sewing machines. They will run their spreading and mill department in two shifts of ten hours each, making twenty hours out of the twenty four. They have been running a great deal of the time lately 11½ hours to the shift and are over run with business. They have never had an idle day excepting 2½ days that they closed down for repairs.

=Frank Hopewell, of the L. C. Chase & Co., is in Europe, in the interest of the firm's "Tough Tread" tires, in which they have a good foreign trade.

=The certificate of incorporation of The Taylor Tire and Development Co. was filed in the office of the secretary of state of New Jersey on November 4. The incorporators are Benjamin F. Taylor and Samuel G. Meeker, of Bridgeport, Conn., and John B. Ross, of Rahway, N. J. The authorized capital is \$125,000, of which \$1000 is paid up. The object is the manufacture of bicycle and vehicle tires.

=John Lang, India-rubber and general produce importer in London, asks THE INDIA RUBBER WORLD to note his change of address from 45 Golden lane, Barbican, to 137 Fenchurch street, E. C.

=The Kokomo Rubber Co. (Kokomo, Ind.), incorporated in the early part of 1896 and engaged since in making bicycle tires, have increased their capital stock from \$50,000 to \$100,000.

=The Bowers Rubber Co. (San Francisco, Cal.) have had their bid accepted on 1000 feet of fire hose for the city of Minneapolis, Minn. They will supply their "Victor" cotton jacket hose, the same as is used by the San Francisco department. It is understood that the Bowers company have sold all the fire hose bought by the city of San Francisco for four years past. They have obtained government contracts for hose to be supplied as far east as St. Louis and Chicago.

=The Canadian Rubber Co. of Montreal are reputed to be employing 1000 hands and working over time. The number employed is about the same as last year, but owing to the longer hours their pay roll is larger.

=The Saylor Rubber Co. have been incorporated under the laws of Maine to conduct a business in reclaiming rubber by what is said to be a new process. They have acquired a plant at Franklin, Mass., operated formerly as a beet sugar factory, which is being equipped with machinery for the new enterprise. The capital authorized is \$150,000, and the incorporators are Francis H. Appleton, Charles J. Southwick, Franklin G. Saylor, Francis H. Appleton, Jr., and Freeman R. Washburn, who are credited with one share each. Others interested are J. G. Ray and D. Thayer. The company have organized with Franklin G. Saylor, of Boston, president; and Charles J. Southwick, of Winthrop, Mass., treasurer.

=The defense of the Toronto Rubber Shoe Manufacturing Co., Limited, for not carrying out the agreement signed with the mayor of Hull, Ont., on February 11, 1898, to remove their factories from Port Dalhousie to the former city, is that the report of their engineering expert was that the water power required would have cost so much more than was represented to them by the Hull authorities. The threatened litigation has been averted by the tender by the company to the City of Hull of the amount of the expenses incurred in connection with voting the by-law granting a bonus to the company.

=The New England Rubber Tire Wheel Co. have been organized in Boston, under the West Virginia corporation laws, with \$50,000 capital. The incorporators are Dudley H. Bradley, A. C. Gunther, M. H. Straughn, D. M. Black, and J. Mentor Caldwell, whose addresses are given as Charleston, W. Va. At the exhibition of the Massachusetts Charitable Mechanics' Association, held during the past month in Boston, the company exhibited wheels showing a new line of rubber tires and mode of their application.

=Lester Leland, treasurer of the Boston Rubber Shoe Co., has been elected also to the position of general manager.

=King & Knight, dealers in rubber hose and couplings, No. 614 Atlantic avenue, have made an assignment. They began business in January, 1896, with a capital reported at \$10,000.

=S. H. C. Miner, president of the Granby Rubber Co. (Montreal), is president and largest stockholder in the company controlling the Knob Hill copper mine, on the line of the Canadian Pacific railway, in British Columbia, where a remarkable find of rich ore has been made.

=Walter A. Clapp, manager for the rubber department of F. C. Howlett & Co., Buffalo, N. Y., is an enthusiastic cyclist out of business hours, having put 4100 miles to his credit this season.

=The Granby Rubber Co. (Montreal), who lately made an addition to their factory buildings, 200 x 42 feet and three stories high, have added new machinery and more engine power, increasing their capacity, it is said, 40 per cent. There has been a proportional increase in the number of hands employed.

=Mr. W. F. Bowers, of the Bowers Rubber Co. (San Francisco, Cal.), made his regular annual visit to the east during November, going as far as Lynn, Mass., where his mother resides, and not forgetting to favor THE INDIA RUBBER WORLD office with a call. It is twenty years since Mr. Bowers went to the Pacific coast as representative of the Gutta Percha and Rubber Manufacturing Co. and ten years since the Bowers Rubber Co. were formed to take over the San Francisco plant of the former company and engage in making goods on an independent basis. The business of the new company has developed gradually but steadily, meeting with a measure of success which has been gratifying.

=The Boston Belting Co. have sent out an attractive looking and convenient shaped blotting pad, which is certain to be appreciated by their many customers.

=John F. Ives, some time of the Cleveland works of the Mechanical Rubber Co., which manufactured the bicycle tires invented by him, is now selling rims for the Boston-Fairbanks Wood Rim Co.

=The Indiana Rubber and Insulated Wire Co. (Jonesboro, Ind.) will continue to make the guaranteed "Indiana" single tube tires, branded with the full name of the company, and will add for the 1899 trade an unguaranteed tire branded "Wabash Single Tube." The Thorsen Co., No. 56 Fifth avenue, Chicago, remain their selling agents.

=The Chicago office of the New Jersey Car Spring and Rubber Co. has issued a timely circular relating to garden hose, so attractive in appearance that the trade will be bound to read it.

=In the court of chancery at Trenton, N. J., an order has been made appointing J. Evans Clancy receiver for 1048 shares in the Empire Rubber Manufacturing Co. owned by Frank A. Magowan and hypothecated with William H. Skirm to secure loans. The receiver furnished a bond for \$25,000. The stock is said to be valued above par.

NEW FACTORY ON THE PACIFIC COAST.

The Gorham Rubber Co., with factory and offices at Seattle, Wash., consist of Ed. C. Garrett and William J. Gorham, with E. C. Dyer, superintendent. They are making hose, belting, packing, and valves, having been induced to start in business at Seattle on account of the importance of that point as a basis of supplies for the Yukon country. The company have made a drydock strip in a continuous length of 300 feet, weighing 1000 pounds, which is spoken of as an exceptionally good piece of work, on account of the success attained in molding screwholes in the strip.

QUICK RECOVERY FROM A FIRE.

The P. Carter Bell Co., manufacturers of rubber substitutes, who were incorporated in New York with \$10,000 capital, have surrendered their charter and taken out a new one in New Jersey, at the same time increasing their capital to \$20,000. An interest has been taken by Charles S. Edger, of Metuchen, N. J., who becomes vice-president, P. Carter Bell continuing as president and Curtis P. Smith as treasurer. On November 11 their plant at Highland Park, near New Brunswick, N. J., was totally

destroyed by fire, but the company were filling orders by the 22d from a temporary plant secured at New Brunswick. In September the company began the erection of a new plant at Metuchen, which they expect to have ready for use during January. Two brick buildings have been erected, with slate roofs, and a steam plant of 100 horse power installed. The new plant, it is reported, will cost about \$15,000.

TO SUCCEED BOYD, JONES & CO.

A NEW firm have been incorporated in Baltimore, under the style of the Baltimore Rubber Co., to succeed the late firm of Boyd, Jones & Co., whose business was placed in the hands of receivers on September 30. The proposed capital stock is \$100,000, in shares of \$100 each. The incorporators are William H. Jones and Charles L. Luess, of Baltimore; Samuel H. Jones, Anne Arundel county, Md.; Alfred L. Lindsay, Newton, Mass.; and Thomas J. Skinner, Wakefield, Mass. W. H. Jones is president and general manager of the new firm, who will act as agents for the Boston Rubber Shoe Co., both for jobbing and the retail trade, and will also represent the New York Belting and Packing Co., Limited. The offices and general wholesale business will be at No. 22 Hopkins place, and the retail and jobbing business, in charge of Clarence J. Boyd, at No. 12 North Charles street.

NEW RUBBER FACTORY AT BUTLER.

WORK has been begun by the new rubber firm of Chapman & McLean (Butler, N. J.), their factory whistle having been sounded for the first time on November 14. As stated already, they have acquired the outfit of soft rubber machinery owned formerly by the Butler Hard Rubber Co., and removed it to a new building constructed for the purpose. The new concern is a partnership firm, composed of two young men who were for several years in the employ of the Butler Hard Rubber Co., and who are beginning business for themselves with a favorable outlook. For the present they will make dress shields, rubber thread, and molded specialties, though they are equipped for filling orders in most lines of soft rubber work. They have opened an office at No. 434 Broadway, in a desirable location, where Mr. Chapman is to be found, while Mr. McLean will give his attention to the mill.

REVIEW OF THE INDIA-RUBBER MARKET.

NEW YORK, November 28, 1898.

PRICES of Pará rubber have remained practically stationary since our last review. About the middle of November a tendency toward easier prices was apparent for a brief while, but it is not known that any business of importance was transacted before the return of the conditions which had prevailed previously. With this slight exception the month presented no fluctuations worth noting. THE INDIA RUBBER WORLD'S advices from Pará indicate that activity in that market was checked during the month by the paucity of supplies from the upriver districts. This was due to a fall of the rivers, unusual at this season, in consequence of which navigation became difficult in various parts, and communication almost wholly interrupted in others. Islands supplies, however, have been rather in excess of the average, which not only has contributed to relieve the market currently, but is of interest as disproving the contention of parties interested in exploiting schemes up the river that the districts longest worked are ceasing to yield rubber. In a recent report the supplies at Pará were stated at about 420 tons of Islands rubber and 8 tons Up-

river. From July 1, the total arrivals at Pará were as follows:

	1898.	1897.	1896.
To July 31.....	1,110	970	910
To August 31.....	2,560	2,110	2,040
To September 30.....	4,260	3,770	3,720
To October 31.....	6,160	5,640	5,830
To November 11.....	7,260	6,660	

Were statistics of production of raw rubber alone to be considered, such an increase over former years might be held to indicate a possible decline in prices, but there is also to be taken into account the condition of the consuming market, which for some time past has been unusually active. In America the footwear industry has been and is taking a large amount of rubber, and manufacturers in the hose and tire lines are just now on the eve of their busiest season, while the mackintosh trade is also very busy. It is to be noted, also, that the rate of arrivals of crude rubber at the beginning of the crop year is never to be taken as a measure of the year's production. This was illustrated last year, when the crop exceeded all records during the first three months, though the total crop showed a decline as compared with the year preceding.

On the whole, the market for Pará sorts is best described as firm, with manufacturers still disposed to limit their purchases to their immediate wants, although, on account of the activity in the industry, their takings have reached a good total.

A comparison with last month's quotations will show a marked advance in Caucho and in Centrals, and in some grades of Africans, in all of which cases stocks are low and arrivals are promptly taken for consumption.

The latest quotations in the New York market are:

PARÁ.		AFRICAN.	
Islands, fine, new....90	@91	Tongues.....62	@63
Islands, fine, old....none	here	Sierra Leone.....none	here
Islands, coarse, new....64	@65	Benguella.....67	@68
Islands, coarse, old....none	here	Congo ball.....62	@63
Upriver, fine, new....94	@95	Cameroon ball.....62	@63
Upriver, fine, old....96	@97	Flake and lumps....41	@42
Upriver, coarse, new....84	@85	Accra flake.....26	@27
Upriver, coarse, old....none	here	Accra buttons.....63½	@64½
Caucho (Peruvian) sheet 67	@68	Accra strips.....66	@67
Caucho (Peruvian) strip 70	@71	Lagos buttons.....63	@64
Caucho (Peruvian) ball 82	@83	Lagos strips.....64	@65
CENTRALS.		Liberian flake.....	@
Esmeralda, sausage....74	@74½	Madagascar, pinky....84	@85
Guayaquil, strip.....60	@64	Madagascar, black....none	here
Nicaragua, scrap....73	@73½	GUTTA-PERCHA.	
Mangabeira, sheet....56	@57	Fine grade.....1.50	
EAST INDIAN.		Medium.....1.30	
Assam.....80	@84	Hard white.....1.00	
Borneo.....40	@54	Lower sorts.....50	
		Balata.....	

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine	\$8000	Upriver, fine.....	98300
Islands, coarse	48600	Upriver, coarse.....	78200
Exchange 87½¢.			

NEW YORK RUBBER PRICES FOR OCTOBER.

	1898.	1897.	1896.
Upriver fine	89 @ 96	87½ @ 88	81 @ 84
Upriver coarse	79 @ 85	60 @ 65½	54 @ 56
Islands fine	85 @ 94	85 @ 86	80 @ 82
Islands coarse	58 @ 65	52½ @ 55	47 @ 48½
Cametá coarse	59 @ 67	55½ @ 61	51 @ 52

STATISTICS OF PARA RUBBER.

FOLLOWING is a comparison for corresponding periods of three years, the figures denoting tons of 1000 kilograms (=2204 pounds):

NEW YORK.					
Fine and Medium.	Coarse.	Total.	1898.	1897.	1896.
Stock, September 30....	117	11 = 128	357	317	
Arrivals, October.....	311	181 = 492	663	759	
Aggregating.....	428	192 = 620	1030	1076	
Deliveries, October.....	280	189 = 469	735	701	
Stock, October 31.....	148	3 = 151	285	375	

PARÁ.		ENGLAND.	
1898.	1897.	1898.	1897.
Stock, September 30....	435	495	175
Arrivals, October.....	1900	1870	2110
Aggregating.....	2335	2365	2285
Deliveries, October....	2015	1672	2035
Stock, Oct. 31.....	320	693	250

	1898.	1897.	1896.
World's supply, Oct. 31 (excluding Caucho)...	2462	2200	2471
Pará receipts, July 1 to October 31	6160	5640	5830
Afloat from Pará, October 31	000		

In regard to the financial situation, Albert B. Beers (broker in India rubber and commercial paper, No. 58 William street, New York), advises us as follows:

"During November there has been a good general demand for paper, and the best rubber names have ruled at about 4 per cent., and in some instances possibly as low as 3½ per cent. for double-name four months paper. The notes of small concerns have ruled at 5 @ 6 per cent."

ANTWERP RUBBER STATISTICS.

[The figures represent weights in kilograms.]

	1898.	1897.	1896.	1895.	1894.
Stocks, September 30....	226,874	257,349	55,158	80,278	73,482
Arrivals, October.....	166,467	165,384	184,759	78,918	34,340
Aggregating.....	393,341	422,733	239,917	159,196	107,822
Sales in October.....	158,690	148,323	118,881	63,986	22,589
Stocks, October 31....	234,651	274,410	121,036	95,210	85,233
Arrivals since Jan. 1....	1,581,946	1,481,169	824,521	420,537	216,258
Sales since Jan. 1.....	1,441,758	1,346,387	792,339	364,759	139,214

AT the inscription sales at Antwerp on November 15, the prices realized for the more important lots disposed of were:

	Brokers' Estimation.	Prices Paid.
1000 kilos Conakry red No. 1 balls.....	fr. 8.40	fr. 8.35
7690 " Conakry red No. 1 balls.....	8.40	8.22½
3085 " Congo (Kassal) red twists.....	9.82½	9.87½
1145 " Congo (Kassal) red.....	9.25	9.20
16,954 " Lower Congo red thimbles.....	5.50	5.70
1189 " Equateur small ball.....	9.40	9.40
5000 " Mongalla mixed.....	8.	8.20
26,097 " Mongalla mixed.....	8.	8.15
6642 " Upper Congo ball.....	8.75	8.75
29,190 " Upper Congo (Lopori) ball.....	9.60	9.35
9391 " Upper Congo (Bussira) ball.....	9.20	9.15

Total offerings included 151,500 kilos Congo sorts, with sales of 142,000, and 14,500 kilos other sorts, with sales of 9500.

IMPORTS FROM PARA AT NEW YORK.

November 4.—By the steamer *Origen*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Reimers & Meyer.....	65,300	13,500	71,300	.....	150,100
New York Commercial Co.	77,500	7,500	19,600	800=	105,400
Boston Rubber Shoe Co.	74,600	6,400	13,800	600=	95,400
Crude Rubber Co.	27,800	4,000	8,200	.....	40,000
Albert T. Morse & Co.	19,100	1,500	14,000	.....	34,600
Ed. Reeks & Co.	8,600	700	1,900	.....	11,200
Peerless Rubber Mfg. Co. ....	.....	.....	11,400	.....	11,400
Otto G. Mayer & Co. ....	.....	.....	9,600	.....	9,600
George G. Cowl.....	5,700	700	1,700	.....	8,100
Hagemeyer & Brunn.....	3,100	.....	2,000	.....	5,100
Total.....	281,700	34,300	153,500	1,400=	470,900

November 16.—By the steamer *Horatio*, from Pará:

New York Commercial Co.	126,800	34,900	19,700	2,800=	184,200
Crude Rubber Co.	75,000	9,300	27,800	.....	112,100
Boston Rubber Shoe Co.	90,000	7,500	15,600	6,600=	119,700
Reimers & Meyer.....	62,800	3,600	29,800	.....	96,200
Otto G. Mayer & Co.	19,300	700	27,800	.....	47,800
Joseph Banigan	19,000	3,700	1,900	.....	24,600
Lawrence Johnson & Co.	11,600	1,100	7,600	.....	30,300
Albert T. Morse & Co. ....	.....	.....	11,400	.....	11,400
Ed. Reeks & Co.	5,000	500	5,200	.....	10,700
Total.....	409,500	61,300	146,800	9,400=	627,000

November 25.—By the steamer *Sobralense*, from Manáos and Pará:

New York Commercial Co.	71,400	5,600	14,400	.....	91,400
Crude Rubber Co.	96,400	13,600	29,100	1,500=	140,600
Reimers & Meyer.....	142,000	5,000	89,600	4,200=	240,800
Edmund Reeks & Co.	39,900	2,800	8,900	.....	51,600
Otto G. Mayer & Co.	6,700	2,300	16,700	.....	25,700
Boston Rubber Shoe Co.	17,700	3,900	20,600	300=	42,500
Joseph Banigan	64,200	12,300	9,200	.....	85,700
Kunhardt & Co.	19,600	8,400	300	.....	28,300
K. Mandell & Co.	11,000	.....	1,100	.....	12,100
Albert T. Morse & Co.	31,000	3,300	4,800	.....	39,100
Lawrence Johnson & Co.	23,100	2,200	3,800	.....	29,100
Peerless Rubber Mfg. Co. ....	.....	.....	29,900	.....	29,900
G. Amsinck & Co.	11,100	1,800	2,000	.....	14,900
William Wright & Co. ....	.....	.....	10,900	.....	10,900
Total.....	534,100	61,300	241,300	6,000=	842,600

	1898.	1897.	1896.	1895.	June Total.....	748,800	1,032,700	583,900	1,030,100
January Total.....	2,939,200	1,393,500	2,718,300	2,869,500	July Total.....	351,700	1,214,500	727,000	566,200
February Total.....	3,420,800	3,684,300	1,945,900	2,274,400	August Total.....	1,072,600	1,098,800	875,500	766,500
March Total.....	2,953,000	2,436,600	2,786,300	3,611,700	September Total.....	907,800	1,940,500	896,900	1,335,900
April Total.....	1,012,000	1,557,600	1,041,500	2,156,400	October Total.....	1,037,000	1,366,000	1,671,200	1,523,700
May Total.....	1,077,200	1,683,900	1,527,800	1,651,400	November Total.....	1,940,500	3,026,900	1,797,600	2,195,600

PARA RUBBER VIA EUROPE.

	1898.	1897.	1896.
Nov. 5.—By the <i>Cymric</i> =Liverpool:			
Albert T. Morse & Co. (Coarse).....	16,000		
Nov. 5.—By the <i>Campania</i> =Liverpool:			
Otto G. Mayer & Co. (Fine).....	9,500		
Otto G. Mayer & Co. (Coarse).....	22,000		
William Wright & Co. (Coarse).....	7,500		
Albert T. Morse & Co. (Coarse).....	4,400	43,400	
Nov. 7.—By the <i>La Gascogne</i> =Havre:			
Otto G. Mayer & Co. (Fine).....	5,200		
Nov. 9.—By the <i>Majestic</i> =Liverpool:			
William Wright & Co. (Coarse).....	28,000		
Albert T. Morse & Co. (Coarse).....	12,600		
Reimers & Meyer (Coarse).....	11,300	51,300	
Nov. 12.—By the <i>Umbria</i> =Liverpool:			
Reimers & Meyer (Fine).....	52,000		
George A. Alden & Co. (Coarse).....	6,000		
Crude Rubber Co. (Coarse).....	7,000		
William Wright & Co. (Coarse).....	2,200	67,800	
Nov. 14.—By the <i>La Champagne</i> =Havre:			
Otto G. Mayer & Co. (Coarse).....	6,500		
Nov. 18.—By the <i>Germanic</i> =Liverpool:			
Reimers & Meyer (Fine).....	22,500		
William Wright & Co. (Fine).....	18,000	40,500	
Nov. 19.—By the <i>Lucania</i> =Liverpool:			
William Wright & Co. (Fine).....	11,500		
William Wright & Co. (Coarse).....	10,000		
Reimers & Meyer (Coarse).....	10,000	31,500	
Nov. 21.—By the <i>La Normandie</i> =Havre:			
Otto G. Mayer & Co. (Coarse).....	16,000		

TOTAL PARA VIA EUROPE.

	1898.	1897.	1896.
Total for January.....	131,500	142,600	25,000
Total for February.....	478,900	53,000	15,300
Total for March.....	168,500	36,875	152,800
Total for April.....	371,500	401,000	316,600
Total for May.....	376,100	146,300	281,200
Total for June.....	109,000	11,200	17,500
Total for July.....	587,500	18,700	none.
Total for August.....	363,000	756,400	12,700
Total for September.....	94,900	284,800	464,400
Total for October.....	107,500	104,800	99,700
Total for November.....	96,300	229,300	

OTHER ARRIVALS AT NEW YORK.

CENTRALS.

	1898.	1897.	1896.
Oct. 25.—By the <i>Lisbonense</i> =Ceará:			
Albert T. Morse & Co.....	5,500		
Oct. 29.—By the <i>Truja</i> =Mexico:			
E. Steiger & Co.....	4,500		
E. N. Tibbals.....	2,000		
H. Marquardt & Co.....	500		
Thebaud Brothers.....	200	7,200	
Oct. 29.—By the <i>Galileo</i> =Bahia:			
A. D. Hitch.....	10,000		
Thomsen & Co.....	5,700	15,700	
Oct. 31.—By the <i>Advance</i> =Colon:			
A. P. Strout.....	8,851		
H. W. Peabody & Co.....	4,374		
G. Amsinck & Co.....	2,987		
Flint, Eddy & Co.....	1,651		
Pomares & Cushman.....	1,400		
Ellinger Brothers.....	1,815		
R. F. Cornwell.....	1,134		
H. Marquardt & Co.....	1,516		
A. P. Strout.....	1,907		
Piza Nephews & Co.....	983		
Eggers & Heinlein.....	890		
W. R. Grace & Co.....	755		
Theo. Herrmann.....	746		
R. G. Barthold.....	656		
W. Loalza & Co.....	607		
Lauman & Kemp.....	571		
Kunhardt & Co.....	324		
Elmenhorst & Co.....	319		
Munoz & Esprilla.....	116	30,211	
Nov. 1.—By the <i>Athena</i> =Cartagena:			
G. Amsinck & Co.....	7,000		
Flint, Eddy & Co.....	2,000		
Lauman & Kemp.....	1,200		
D. A. De Lima & Co.....	1,000		
J. H. Lang.....	1,000		
Guterman Rosenfeld & Co.....	1,000		
Punderford & Co.....	600		
For Bremen.....	800	14,400	

Nov. 1.—By the *Brasilia*=Hamburg:

Reimers & Meyer..... 9,100

Nov. 1.—By the *Polaris*=Hamburg:

Reimers & Meyer..... 18,600

Nov. 1.—By the *Ardanros*=Belize:

Jose Agostini..... 2,700

Eggers & Heinlein..... 1,000 3,700

Nov. 3.—By the *Knickerbocker*=New Orleans:

Albert T. Morse & Co..... 3,000

A. N. Rotholz..... 500 3,500

Nov. 2.—By the *Lydia*=Mexico:

H. Marquardt & Co..... 1,000

L. Monjo, Jr. & Co..... 500

Pyrograve Wood Co..... 200 1,700

Nov. 5.—By the *Cymric*=Liverpool:

Windmuller & Roelker..... 500

Nov. 9.—By the *New Orleans*=New Orleans:

Albert T. Morse & Co..... 1,300

Nov. 5.—By the *Campania*=Liverpool:

Reimers & Meyer..... 35,000

Otto G. Mayer & Co..... 13,200 48,200

Nov. 7.—By the *Menominee*=London:

Reimers & Meyer..... 5,500

Nov. 9.—By the *Vigilancia*=Mexico:

Flint, Eddy & Co..... 700

Nov. 9.—By the *Athos*=Greytown:

G. Amsinck & Co..... 3,500

A. P. Strout..... 3,000

Andreas & Co..... 800

J. P. Rodriguez & Bro..... 100

For Hamburg..... 800 8,200

Nov. 9.—By the *Angers*=Santos:

W. R. Robbins..... 2,500

Nov. 9.—By the *Majestic*=Liverpool:

Otto G. Mayer & Co..... 11,200

Nov. 13.—By the *Coleridge*=Pernambuco:

Thomsen & Co..... 2,600

Nov. 11.—By the *Financé*=Colon:

Isaac Brandon & Bro..... 9,705

G. Amsinck & Co..... 9,104

Roldan & Van Sickle..... 8,780

Pomares & Cushman..... 5,320

Dumarest & Co..... 8,214

A. Santos & Co..... 4,340

Hirzel Feltman & Co..... 3,354

Crude Rubber Co..... 4,078

Piza, Nephews & Co..... 2,264

Lauman & Kemp..... 2,107

W. R. Grace & Co..... 1,708

Flint, Eddy & Co..... 1,214

Frame, Alston & Co..... 941

Jacob Balz..... 710

A. M. Capen Sons..... 500 62,933

Nov. 14.—By the *El Mar*=New Orleans:

A. T. Morse & Co..... 10,000

Nov. 18.—By the *Alleghany*=Cartagena:

D. A. De Lima & Co..... 9,000

Kunhardt & Co..... 5,550

Ricardo Alence..... 4,000

G. Amsinck & Co..... 2,000

John Boyd, Jr. & Co..... 1,500

Flint, Eddy & Co..... 1,200

For Bremen..... 2,000 25,200

Nov. 19.—By the *Ardanhu*=Belize:

Eggers & Heinlein..... 1,200

Nov. 18.—By the *Germanic*=Liverpool:

George A. Alden & Co..... 14,200

Crude Rubber Co..... 14,200 28,400

Nov. 18.—By the *Patria*=Hamburg:

George A. Alden & Co..... 6,000

Nov. 19.—By the *Paris*=Southampton:

Reimers & Meyer..... 5,700

Nov. 19.—By the *Karthagos*=Mexico:

Thebaud Brothers..... 700

Flint, Eddy & Co..... 600

E. Steiger & Co..... 200 1,500

Nov. 22.—By the *Alliance*=Colon:

G. Amsinck & Co..... 9,466

A. Santos & Co..... 5,846

Roldan & Van Sickle..... 5,237

Hirzel Feltman & Co..... 4,923

Frame, Alston & Co..... 4,637

W. R. Grace & Co..... 4,118

Mecke & Co..... 3,922

Isaac Brandon & Bros..... 3,823

Dumarest & Co..... 2,352

Flint, Eddy & Co..... 1,450

Munoz & Esprilla..... 1,113

J. B. Sageman..... 715

J. Aparicio & Co..... 616

Piza, Nephews & Co..... 406

H. W. Peabody & Co..... 270

D. A. De Lima & Co..... 250

Samper & Jimenez..... 140

Kunhardt & Co..... 138

A. M. Capen Sons..... 127 49,546

Nov. 22.—By the *Altai*=Greytown:

A. P. Strout..... 4,500

G. Amsinck & Co..... 4,500

For Havre..... 3,200

Andreas & Co..... 2,000

A. N. Rotholz..... 1,200

Kunhardt & Co..... 1,000

Roldan & Van Sickle..... 600

Punderford & Co..... 300 17,500

TOTAL CENTRALS AT NEW YORK.

	1898.	1897.	1896.
January.....	400,135	255,082	339,937
February.....	290,944	154,858	297,762
March.....	330,624	215,671	167,924
April.....	290,299	242,671	175,511
May.....	273,040	169,435	260,926
June.....	276,669	178,813	154,987
July.....	264,404	178,021	281,044
August.....	367,443	140,967	116,215
September.....	359,263	211,029	185,993
October.....	308,079	270,838	180,462
November.....	271,917	183,839	

AFRICANS.

POUNDS.

Oct. 26.—By the *Noordland*=Antwerp:

A. T. Morse & Co..... 2,200

Oct. 27.—By the *Fennland*=Southampton:

Reimers & Meyer..... 21,800

Oct. 29.—By the *Britannic*=Liverpool:

Livesey & Co..... 19,900

Oct. 29.—By the *Etruria*=Liverpool:

George A. Alden & Co..... 14,300

Crude Rubber Co..... 14,300

Reimers & Meyer..... 19,300

Livesey & Co..... 18,700 66,600

Nov. 1.—By the *Brasilia*=Hamburg:

Reimers & Meyer..... 12,000

Nov. 1.—By the *Patria*=Marseilles:

Reimers & Meyer..... 2,200

Nov. 1.—By the *Polaris*=Hamburg:

Albert T. Morse & Co..... 6,000

Nov. 2.—By the *Peninsular*=Lisbon:

George A. Alden & Co..... 15,800

Crude Rubber Co..... 16,000

Nov. 5.—By the *Cymric*=Liverpool:

George A. Alden & Co..... 10,200

Crude Rubber Co..... 10,200 20,400

Nov. 5.—By the *Campania*=Liverpool:

Reimers & Meyer..... 16,400

Otto G. Mayer & Co..... 2,000

William Wright & Co..... 16,500

George A. Alden & Co..... 5,800

Crude Rubber Co..... 5,800

Livesey & Co..... 17,400 63,900

Nov. 7.—By the *Taurica*=Liverpool:

Albert T. Morse & Co..... 40,000

Nov. 7.—By the *Menominee*=London:

Reimers & Meyer..... 10,300

Nov. 9.—By the *Southark*=Antwerp:

Albert T. Morse & Co..... 75,000

Reimers & Meyer..... 56,300

George A. Alden & Co..... 10,900

Crude Rubber Co..... 10,900 153,100

Nov. 9.—By the *Majestic*=Liverpool:

William Wright & Co..... 14,200

George A. Alden & Co..... 11,000

Crude Rubber Co..... 11,000

Reimers & Meyer..... 11,000

Livesey & Co..... 7,000 54,200

Nov. 12.—By the *Umbria*=Liverpool:

George A. Alden & Co..... 21,100

Crude Rubber Co..... 22,200

William Wright & Co..... 9,200

Joseph Cantor..... 4,000

Nov. 14.—By the Pretoria=Hamburg:	
Albert T. Morse & Co.	13,000
Reimers & Meyer	16,200
Nov. 16.—By the Aller=Genoa:	29,200
George A. Alden & Co.	3,600
Nov. 18.—By the Germanic=Liverpool:	
George A. Alden & Co.	5,100
Crude Rubber Co.	8,400
William Wright & Co.	7,000
Otto G. Mayer & Co.	22,000
Livesey & Co.	7,000
Nov. 18.—By the Patria=Hamburg:	48,900
George A. Alden & Co.	16,700
Reimers & Meyer	40,000
Nov. 19.—By the Lucania=Liverpool:	54,700
Livesey & Co.	35,000
William Wright & Co.	20,000
George A. Alden & Co.	5,000
Crude Rubber Co.	7,300
Reimers & Meyer	7,600
Nov. 21.—By the British King=Antwerp:	75,800
Joseph Cantor	15,000
Nov. 21.—By the Manitou=London:	
Otto G. Mayer & Co.	3,500
Nov. 22.—By the Kensington=Antwerp:	
Livesey & Co.	11,000

TOTAL AFRICANS AT NEW YORK.

	1898.	1897.	1896.
January	975,000	869,000	424,900
February	1,308,900	737,700	816,300
March	1,171,500	816,111	775,100
April	1,207,200	892,700	316,300
May	695,200	953,331	693,800
June	912,800	460,300	393,300
July	1,055,600	857,600	234,300
August	728,000	714,000	168,000
September	582,100	670,685	287,800
October	573,700	674,300	499,300
November	934,400	588,200	

EAST INDIAN.

	1898.	1897.	1896.
Nov. 1.—By the Craigem=Singapore:			
J. W. Greene & Co.	20,000		
J. W. Greene & Co. (Pontianak)	73,700		
George A. Alden & Co. (Pontianak)	54,000		
Windmuller & Roelker (Pontianak)	27,600		
Windmuller & Roelker	11,000		
Dwight P. Cruikshank	7,500	185,800	
Nov. 1.—By the Marquette=London:			
Frank Greene	15,000		
Nov. 6.—By the Menominee=London:			
Frank Greene	28,000		
Nov. 9.—By the Indrapura=Singapore:			
Reimers & Meyer	10,000		
Reimers & Meyer (Pontianak)	362,500		
George A. Alden & Co. (Pontianak)	66,000		
Windmuller & Roelker (Pontianak)	19,800		
Windmuller & Roelker	5,500		
J. W. Greene & Co.	11,200		
D. P. Cruikshank	5,400	470,100	

Nov. 12.—By the St. Louis=Southampton:	
Reimers & Meyer	31,800
Nov. 21.—By the Manitou=London:	
William Wright & Co.	35,000
Nov. 27.—By the Lio=Singapore:	
George A. Alden & Co. (Pontianak)	95,400
J. W. Greene & Co. (Pontianak)	17,000
Reimers & Meyer (Pontianak)	130,000
Windmuller & Roelker (Pontianak)	4,500
Reimers & Meyer	5,500
	252,400

TOTAL EAST INDIAN AT NEW YORK.

	1898.	1897.	1896.
January	332,500	178,000	315,400
February	638,400	184,558	265,600
March	378,000	88,100	310,100
April	299,000	96,500	822,400
May	941,200	188,400	448,000
June	431,800	219,800	53,900
July	507,000	382,800	418,300
August	1,090,300	212,500	171,800
September	780,000	88,600	12,500
October	384,300	81,200	
November			

GUTTA-PERCHA.

	1898.	1897.	1896.
Oct. 21.—By the Belgenland=Southampton:			
Reimers & Meyer	1,100		
Nov. 9.—By the Indrapura=Singapore:			
Reimers & Meyer	4,200		
Nov. 14.—By the Measaba=London:			
Brown, Shipley & Co.	2,500		
Nov. 14.—By the Pretoria=Hamburg:			
Robert Soltan & Co.	21,600		

BALATA.

Oct. 21.—By the Belgenland=Southampton:	
J. W. Wuppermann	5,000
Nov. 7.—By the Menominee=London:	
Robert Soltan & Co.	1,000

RECAPITULATION.

	1898.	1897.	1896.	1895.
January	4,818,335	2,668,182	3,823,537	4,038,229
February	6,196,944	4,710,58	2,823,537	3,078,651
March	4,645,724	3,563,567	4,194,24	4,818,303
April	3,096,290	3,180,405	3,971,311	3,142,672
May	3,403,140	3,141,558	3,171,726	2,971,400
June	2,578,069	1,813,913	1,280,587	1,788,070
July	2,722,904	2,610,921	1,806,244	1,686,956
August	3,128,743	3,142,157	1,659,815	1,831,101
September	3,016,163	3,406,814	1,976,885	3,278,833
October	2,832,579	2,858,538	2,463,164	3,578,661
November	4,828,017	2,880,130	4,056,825	

CUSTOM-HOUSE FIGURES.

PORT OF NEW YORK—OCTOBER.

Imports:	POUNDS.	VALUE.
India-rubber	2,289,207	\$1,323,416
Gutta-percha	14,315	6,871
Jelatang (Pontianak)	110,736	2,465
Total	2,394,658	\$1,332,452
Exports:	POUNDS.	VALUE.
India-rubber	55,025	\$38,033
Reclaimed rubber	139,876	14,351

[NOTE.—The average price of India-rubber imported was 58.6 cents per pound; in September, 60.9 cents; in August, 64.07 cents; in July, 60.09; in June, 56.5; in May, 60; in April, 59.8; in March, 54.8; in February, 57.5; in January, 53.4 cents.]

BOSTON ARRIVALS.

	POUNDS.	VALUE.
Oct. 7.—By the Hibernian=Glasgow:		
George A. Alden & Co.—East Indian	1,008	
Oct. 10.—By the Catalonia=Liverpool:		
Livesey & Co.—African	5,795	
Oct. 12.—By the Michigan=Liverpool:		
George A. Alden & Co.—African	2,560	
Oct. 17.—By the Canada=Liverpool:		
George A. Alden & Co.—African	2,178	
Livesey & Co.—African	4,638	
Oct. 20.—By the Moravia=Hamburg:		
Reimers & Meyer—African	10,09	
Oct. 20.—By the Kansas=Liverpool:		
Reimers & Meyer—Centrals	6,276	
Oct. 21.—By the Cambrian=London:		
Reimers & Meyer—African	14,061	
Oct. 24.—By the Bay State=Liverpool:		
Reimers & Meyer—African	10,889	
Oct. 26.—By the Saehem=Liverpool:		
Reimers & Meyer—Cauch	18,591	
George A. Alden & Co.—East Indian	3,600	

	POUNDS.	VALUE.
Total at Boston for October	79,455	\$44,958
Total since January 1	994,423	\$532,933

NEW ORLEANS.

OCTOBER.

	POUNDS.	VALUE.
From Nicaragua	32,101	\$20,742

OCTOBER EXPORTS OF INDIA-RUBBER FROM PARA.

[NOTE.—The figures denote weights in Kilograms.]

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Pasinelli, Prusse & Co.	143,140	20,230	84,040	6,975	255,285	166,430	17,680	38,400	—	222,510	477,795
La Rocque da Costa & Co.	21,538	5,147	35,330	2,900	64,915	156,576	21,027	89,988	989	268,580	333,495
Adelbert H. Alden	84,660	12,750	24,310	602	122,322	87,380	14,960	90,040	—	192,380	314,702
Rudolf Zietz	9,450	1,040	22,755	—	33,245	97,144	10,986	35,570	1,898	145,598	178,843
R. Suarez	—	—	—	—	—	50,093	9,355	10,077	942	70,467	70,467
Denis Crouan & Co.	—	—	2,414	—	2,414	35,700	4,245	16,960	—	56,905	59,319
Velhote, Silva & Co.	—	—	—	—	—	23,460	1,700	7,270	—	32,430	32,430
The Sears Para Rubber Co.	18,800	1,870	6,800	—	27,470	—	—	—	—	—	27,470
Kanthack & Co.	—	—	4,842	—	4,842	11,986	1,849	6,103	—	19,938	24,780
H. A. Astlett	13,090	1,179	5,501	—	19,770	—	—	—	—	—	19,770
Pires Teixeira & Co.	3,700	—	2,487	—	6,187	—	—	—	—	—	6,187
Singlehurst, Brocklehurst & Co.	—	—	—	—	—	3,032	1,200	14	—	4,345	4,345
Direct from Iquitos	—	—	—	—	—	7,160	314	47,859	55,196	110,538	110,538
Direct from Manaos	36,167	5,937	8,540	400	51,044	194,996	54,397	51,013	1,048	301,450	352,494
Total for October	330,545	48,153	197,919	10,877	587,494	833,966	137,806	393,294	60,073	1,425,141	2,012,635
Total for September	220,441	41,317	104,652	25,057	391,467	845,404	94,357	322,863	11,676	1,274,300	1,665,767
Total for August	301,410	41,954	150,751	45,425	539,540	357,853	51,520	213,266	38,420	661,059	1,200,599
Total for July	216,951	18,447	133,361	95,572	464,331	341,161	50,789	166,084	181,008	739,042	1,203,373
January-June	2,880,545	539,466	1,512,627	590,592	5,523,280	3,025,671	538,549	1,292,071	787,354	5,637,645	11,160,925
Total during 1898	3,951,892	689,337	2,099,310	767,523	7,506,112	5,404,055	867,023	2,387,578	1,077,531	9,737,187	17,243,999

Percentage exported to the United States, 43.33; percentage exported to Europe, 56.67.

